

# *Capitalism and Morality*

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## **TECHNOLOGY ENTREPRENEURSHIP: A PATH TO URBAN ECONOMIC EMPOWERMENT**

**Frantz L. Alcindor**

**Frantz graduated from Wheeling Jesuit University in 1995 with a degree in Political and Economic Philosophy. He is currently Mentoring Coordinator and Adjunct Professor at the College of Staten Island.**

### **Introduction**

Technological innovation accounts for more than half of all economic growth in the world (Apax, 6-7; Mandel). Since World War II the United States has been the global leader in technological innovation, which explains America's economic stature in the world today (Mowery; Rosenberg). America's minority communities, despite challenges, have established a rich tradition of scientific innovation, which has fueled America's economic ascendancy. From our "first African American inventor," Benjamin Banneker, who assisted in the design of our nation's capital, to Charles Drew, whose research with blood revolutionized medicine resulting in the extension of life expectancy across the globe; the scientific contributions of America's minorities exposed the absurdity of racist dogma while at the same time creating conditions which allowed America to transform herself from an agrarian economy into the digitally based one it is today.

This transformation has resulted in a nation awash in wealth unprecedented in human history. America's GDP in 2005 was \$12.4 trillion which is certainly impressive when we consider that we make up just 4% of the world's population (CIA 2006). However, despite the prosperity, economic disparities persist among minority and non-minority communities. In 1997 the average gross receipts for each minority firm was \$194,600 as opposed to \$1,010,100 for non-minorities. For African-Americans, it was \$86,500 (MBDA 2001). There are numerous factors, which contribute to the disparity. This paper will analyze the current state of minority business along with demographic changes; identify opportunity gaps and offer recommendations to the National Urban League (NUL) to stimulate a culture of technological innovation, which will enhance the economic empowerment of urban and minority communities.

### **Vision Statement: Creating a Culture of Innovation**

Changing culture can sometimes appear to be an unwieldy and elusive goal. Therefore, it is not the purpose of this proposal to serve as a panacea for all issues in minority and urban communities. In addition, for many, though entrepreneurship may be a calling, technology commercialization may not be the right fit. However, as America's economic stature increasingly becomes challenged due to globalization, and as the nation takes bold steps towards building bases on the Moon and Mars, how will history describe our efforts to prepare the children of our urban communities? Will they become pioneers who will confidently shape the future with their ingenuity or will they wallow in the shadows of a decayed and abandoned urban infrastructure? As the saying goes, 'a rising tide lifts all ships' and in the

spirit of W.E.B. DuBois', 'The Talented Tenth,' this is an opportunity for the NUL to set forth an audacious vision to develop business and civic leaders who will reclaim our legacy and shape our culture into one that celebrates technological innovation.

### **Why Does Technology Innovation Perpetuate Wealth and Job Creation?**

Many economists have written widely on this subject (Abramovitz; Apax, 7; Mowery, 4; Rosenberg; Solow). To build a case for promoting technology entrepreneurship, it is important to briefly explain the relationship between innovation and wealth: Technological innovation improves the tools we use to work. Innovation is a process that seeks ways to reduce inefficiency. Reducing inefficiency increases the output for every unit of input. For example, people who use typewriters, no matter how hard they work, could never be as productive if they used computers. Companies who replace their typewriters with computers find that their productivity improves. Since they can produce more work this tends to yield higher profits and higher wages for the employees of the company. Whenever productivity is low, wages and profits tend to be lower. For example, if a construction worker were to have his bulldozer replaced with a shovel to dig large holes, he could not dig as many holes within the same time period as he did with the bulldozer. His productivity will be lower, therefore his profits will also tend to be lower. That's why construction workers in third-world countries who don't have bulldozers are not paid nearly as well as workers from industrialized countries who have access to laborsaving equipment. Higher productivity and higher wages result from continuous technological innovations.

When a series of technologies work synergistically throughout a society (i.e. telephones, toasters, e-mail, lasers, airplanes, artificial hearts, etc.) it results in a society whose total productivity will be higher than those that do not have the same technologies. The extra productivity is converted into new wealth. The new wealth means higher wages, more jobs, and surplus money available for investments and philanthropy.

### **An Analysis of Minority Business**

The Minority Business Development Agency (MBDA) assembled the *Survey of Business Owners* (SBO). It is economic data reported by the U.S. Census Bureau, which tracks the performance of minority business every five years. The data reveals that between 1997 and 2002 the number of minority firms grew at a rate of 35% versus 10% for all US firms. This is very encouraging news, however, there are several reasons to be concerned.

#### **Entrepreneurial Parity Gap**

Despite the recent growth of minority businesses there continues to be a substantial gap between the percentage of minority and non-minority firms equivalent to their percentage representation of the U.S. population. For example, minorities make up 32% of the total U.S. population. If there were entrepreneurial parity, minority firms would make up 32% of all U.S. firms. Gross revenues and total employees of minority businesses would also equal 32% of the total figures. However, in 2002, the total number of minority firms represented only 18% of all U.S. firms. Gross revenues earned by minority firms represented just 3% of the U.S. total, plus they employed only 4% of all U.S. workers.

#### **Minority firms in general and African-American firms in particular are too highly concentrated in Service sector industries.**

According to the SBO, 61% of all minority businesses are in the Services sector compared to 52% for all U.S. companies. The Services sector is comprised of a myriad of industries including: Administrative support, Waste Management, Entertainment as well as Healthcare and Social Assistance. Within the

Services sector 21% of African-American firms are in Healthcare and Social Assistance. This in part explains the entrepreneurial gap between minorities and non-minorities. Service-oriented industries in contrast to other industries, especially tech-oriented ones, are labor intensive and tend not to have high profit margins. This is consistent with findings from a 2003 Kauffman Foundation report, *Minorities and Venture Capital*, which found that VCs had 'safer' returns when they invested in minority firms because they tend not to be in volatile high-tech industries. In one sense this is a very positive. If successful investing is a function of managing risk and uncertainty, then VCs should place their bets with minority firms. However, new wealth and new jobs are a result of *growth*, not *safety*. Growth strategy investing is risky because it involves speculating on the distant future. However, if minority businesses intend to create new jobs for our communities it is critical that we diversify our economic activity.

### **Forecasting: Changing Demographics and Economic Implications**

According to the Department of Commerce, minority populations will account for nearly 90% of the total 131 million growth in the U.S. population from 2005 to 2050. Minorities who now represent 32% of the U.S. population are expected to represent nearly 50% by 2050 (MBDA 1999). If minority firms continue to remain heavily concentrated in service sector industries this means potentially fewer people will be involved in tech-oriented industries. This has significant implications not just for minority communities, but also for the nation, especially as it competes against the rising high-tech economies of India and China. This is no longer a 'minority concern,' it is an American one.

### **Understanding Technology Entrepreneurship and its Opportunities**

A common misconception of technology entrepreneurship is that it requires the entrepreneur to have an extensive background in a scientific discipline. Although having such a background can be helpful, it is not entirely necessary. Much of technology entrepreneurship requires one to have the ability to *identify* new innovations. For example, the federal government annually spends \$83 billion on research and development, however; only 10% of all federally owned patents are ever used (Congressional Research Service 2003). The following is a small sampling of products that were created from federal research: shock-absorbing helmets, fogless ski goggles, flat panel televisions, smoke detectors, portable x-ray devices, invisible braces, microcomputers, sports bras, ski boots, Velcro, the bar code, ear thermometer and many others (Ultimate Space Place). These inventions have made a lot of people a lot of money. However, one of the reasons federal R&D remains underutilized is that when a technology is first introduced it is in a crude stage of development (Rosenberg). It is often difficult to envision how the technology can be commercially viable in the future. For example, consider this 1939 editorial from the *New York Times* downplaying the commercial potential of television: "The problem with television is that people must sit and keep their eyes glued to the screen; the average American family hasn't time for it...television will never be a serious competitor of broadcasting" (Edidin). Despite the challenges to identify the next successful innovation, minority firms can fill this opportunity gap by breathing life into the 90% of federal patents that are presently not used. Plus, there are other sources for new technologies as well.

An important prerequisite of the technology entrepreneur is the ability to cultivate the right relationships to bring innovations to the market place. The conventional model of inventors single-handedly creating and selling their ideas is rare and antiquated. Most technology entrepreneurial ventures result from diverse collaborations between universities, federal labs, research institutions, venture capitalists, businesses, patent attorneys, non-profits as well as federal, state and local agencies. Inventors are only part of the technology commercialization process. Inventors and research institutions need help from partners to bring their ideas to the market. This process is a win-win for everyone including the public whose lives improve from the use of these innovations.

Within this context, minority and urban communities unknowingly have a long-term comparative advantage. Innovations notoriously come from geographic regions that have a confluence of research institutions and businesses (Porter). This infrastructure already exists in most urban centers. For example, New York City, although it is well known for being the 'capital of capital,' it is not known for being a hub for technological development. It is similar to other urban centers in that it has a declining manufacturing base and its seaport is no longer a viable source for jobs. It is increasingly becoming dependent on a single industry, namely Wall Street (Gelinias 2006). To free the city from the fluctuations of the stock market, Mayor Mike Bloomberg and others are exploring ways to diversify the City's economy (Bloomberg 2006). NYC presently has the right infrastructure to cultivate a regional cluster of technological innovation. It has a high concentration of colleges and universities within proximity of a large VC community. The City University of New York holds the world record for Nobel Prize winners and the State University of New York in 2005 managed \$735 million in research funding (Research Foundation 2005).

Economists have found a positive correlation between the rate of innovation within a region and its average wage (Porter, 11). Universities have been found to play a significant role in the rate of innovation produced by a region expressed through the number of patents they file (EDA 2003, 2004). Minority communities have a remarkable network of colleges and universities such as the Historically Black Colleges and Universities (HBCU). These institutions can be galvanized into a network of research centers that support minority businesses and communities. Trends show that university technology transfer is intensifying. In the mid-1980s university patents accounted for just .5% of all U.S. utility patents issued and 1.1% of corporate-owned utility patents. In 2000 the figures increased to 2% and 4.4% respectively. In 2003, universities earned \$1.3 billion in licensing income (Apax 2005). Unfortunately only a handful of HBCUs license their innovations. A few of them are Tuskegee, Florida A&M, North Carolina A&T, Prairie View and Morgan State. The untapped synergy between HBCUs and minority businesses would significantly enhance the economic empowerment of urban communities. Additionally, there are numerous stories of successful minority technology ventures for aspiring entrepreneurs to reference. Lonnie Johnson, a former NASA scientist, invented the very popular Super Soaker. He commercialized his invention to Hasbro through his company, Johnson Research and Development (Johnson 2006). There is also Fitz Walker, President and CEO of Bartron Medical Imaging (BMI). It is a high-technology company located in New Haven Connecticut that specializes in the "development of noninvasive imaging systems, for medical diagnostic and environmental protection applications" (About BMI 2006). In 2005 his company entered into a cooperative research and development agreement with NASA to develop "software that will benefit medical imaging and disease management" (Federal Laboratories Consortium; NASA 2005; 2005).

## **Strategies for the National Urban League to Create a Culture of Innovation**

### **Provide Technology Entrepreneurship Education to Minority Businesses and YPs**

As part of the NUL's curriculum for its Urban Entrepreneur Partnership Initiative, courses can be developed for interested minority firms and young professionals to understand the various facets of technology entrepreneurship. A sample of topics would include: Protecting Intellectual Property; Understanding Federal, University and Corporate Technology Commercialization; Technology and Market Evaluation; Technology and Ethics.

The courses could be developed through in-kind contributions from NUL corporate and university partners. NUL could earn revenue by charging tuition for the seminars. Technology management societies typically have conference fees ranging from \$200 to \$1000 for similar seminars. Since university technology transfer has been found to be most successful with the life sciences, special seminars can be directed at the minority medical community to encourage collaborations with HBCUs (Apax).

## **Sponsor National HBCU Technology Entrepreneurship Competition**

MIT's \$50K Entrepreneurship Competition in the past 16 years has created over 60 companies with a combined value of \$10.5 billion (Apax, p. 20). Similar results could potentially be garnered if annually, each HBCU sent a team of students to compete against other HBCU teams. If teams are rewarded for coming up with commercialization ideas for their own school's research, this may spur more R&D activity among HBCUs.

## **Create Hip Hop Science Fairs for K – 12 Students**

Imagine a science fair competition sponsored by Roc-A-Fella Records. The 1<sup>st</sup> place prizes are an academic scholarship and a day to hang out with Jay-Z. The fact is children idolize hip-hop artists. Wouldn't it be a powerful testament to the value of scientific achievement if it were publicly endorsed and rewarded on BET by figures such as Jennifer Lopez and Kanye West? Similar to NUL's Hip Hop Reader program, Hip Hop artists should be approached to invest their time and money to encourage scientific inquiry among young people through a science fair.

Economic empowerment lies in our ability, particularly our youth, to think innovatively. Innovation is the combined result of curiosity, creativity and drive. NUL can do much to cultivate these attributes in our future generations.

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