

Chapter 2

Technology and Capacity Building

Introduction

Poverty is created and sustained by a system, not merely low income. A weak infrastructure precludes safe water, electricity, efficient food production and distribution. The absence of a rule of law and/or dangerous neighbors threatens security and confidence in safety and encourages corruption, thus depriving poor people of whatever resources might be available. Poor education weakens one's capabilities to compete for jobs and leadership. Scarcity of health care facilities exacerbates epidemics and curable diseases. Natural disasters create unpredictable havoc. Note that except for natural disasters, almost all of these phenomena are preventable. But almost all of them work together to create a system of poverty that becomes almost inescapable.

In this chapter we will take a more positive point of view. We include four cases of projects aimed at addressing the system of poverty. When apartheid came to an end, Eskom, the leading energy company in South Africa faced the daunting task of electrifying that country in areas that had either been neglected or where, in challenging the apartheid regime, the custom was to illegally tap into existing power lines. Its biggest challenge was to change mindsets of those previously excluded from the mainstream economy while ensuring that all communities would have power.

The second case, the Volta River Project, demonstrates the difficulties of providing adequate power and water to communities long deprived of those facilities. The third case, Transforming Education In Rural Haiti: Intel and L'Ecole De Choix, narrates a school project in earthquake-ravaged Haiti, and shows how an education initiative can work even in a very poor and allegedly corrupt country.

The chapter ends with Zynga, a large interactive social gaming company. Despite its commercial successes or maybe because of their impact on millions of players of its games, Zynga embarked on a series of efforts to raise funds for various antipoverty initiatives in the developing world. Its projects and challenges are narrated in this case.

All of these cases illustrate that a systemic approach to poverty alleviation, country by country, can make a difference, a big difference. And none of these are purely philanthropy. Each is trying to improve or eliminate the conditions under which poverty thrives, and each with success.

Eskom and the South African Electrification Program (A)¹

The Beginning of the Electrification Program

The year was 1994, and Tienz² sat at his desk contemplating the enormous scope of the job that was in front of him. Eskom and the provision of electricity had always been an integral part of the economic and social evolution of the South African nation. Because of its important role in helping to shape the formation of South Africa, Eskom now saw itself as a necessary participant in the reconstruction process that the new African National Congress (ANC) government was outlining in an effort to rebuild the country in the postapartheid era.³ The company even participated in the creation of upliftment programs under apartheid.⁴ For example, in the late 1980s, the company had implemented an affirmative action policy to recruit black South Africans into management positions; they had also created programs to improve the school systems within black South African communities.

The present situation was somewhat more complicated than Eskom's past initiatives: in 1994, the new government had specifically stated that electrical access to all citizens was essential to the Reconstruction and Development Program (RDP), which laid out initiatives to help the country rebuild itself.⁵ Management informed Tienz that the company had decided to aid the new government in its reconstruction process and implement a nation-wide electrification program – a far cry from simply extending the grid a few kilometers from urban centers.

¹This case was prepared by Brian D. Cunningham under the supervision of Michael E. Gorman, and Patricia H. Werhane. Partial Support for this project was supplied by grants from the Ethics and Values in Science Program of the National Science Foundation and the Darden School. Copyright © 1999 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. The 2013 Case Addendum was prepared by Tim Rolph.

²Fictitious name.

³For a brief historical perspective of South Africa, see [Appendix 1](#); a historical description of Eskom's background, [Appendix 2](#); a description of the 1994 elections and the Reconstruction process that was outlined, [Appendix 3](#); a description of Eskom's corporate initiatives and policies under Apartheid, [Appendix 4](#); and for a description of Eskom's stated commitment to the South African reconstruction process, [Appendix 5](#).

⁴Programs used to narrow the discriminatory gap between white and black South Africans.

⁵African National Congress, *The Reconstruction and Development Programme*, (Johannesburg, South Africa, 1994).

The scope and scale of the proposed electrification program seemed overwhelming to Tienz. How was he going to develop a system to provide electrical connections to approximately 1.75 million homes (approximately nine million people) by the year 2000 in a cost-effective manner? Not only would new transmission lines have to be constructed, but safe and reliable distribution meters had to be designed to meet the unique conditions that existed in black South African townships, squatter camps, and villages.⁶ The project would be demanding technologically – the possibility of recapturing the capital costs involved seemed impossible. The consumer market (i.e., the black South Africans) to whom Eskom was going to be providing electricity not only had grown accustomed to using coal, wood, and paraffin for all of their energy purposes, but they also had dramatically low and inconsistent monthly incomes. So how was Tienz supposed to develop a pricing structure for these new connections, given the depressed economic situation that existed in those areas?

On his drive into work each morning, it was easy for Tienz to see the economic differences that apartheid had created between white and black South Africans. The highway was lined with hundreds of shacks that people had built out of spare wood, tin, and even cardboard in order to have a home closer to the city and the economic activity close to its borders, bizarre for a country that had a standard of living comparable to that of the highest-rated countries in the world. The average monthly income for a black South African was (South African Rand) ZAR294,⁷ small when contrasted with the fact that average monthly expenditures for food and housing were ZAR28 and ZAR251 respectively. Half of all black South Africans lived below the poverty line; moreover, approximately 41 % of the black South African population was unemployed, and those who were employed had jobs either seasonal in nature or inequitable in salary structure.⁸ For example, black South Africans made up 75 % of South Africa's population, but they earned only 28 % of the country's total income, whereas white South Africans were only 13 % of the population but earned 61 % of the country's income.

The electrification program was seen as a "basic need" by the ANC government because only 20 % of black South Africans had access to electricity in 1994. Housing and water were identified as the two other basic needs: one-fourth of all blacks either had no housing or lived in shacks, and 40 % did not have access to clean water. These basic needs were identified because of the wide discrepancies between white and black South Africans, which were not only economic. For example, a typical black South African's life expectancy was 57 years compared to 73 years for a white South African, and infant mortality was 57 per 1,000 live births for blacks compared to 13 per 1,000 live births for whites.

⁶People could settle on municipal lands under new South African law, which meant that thousands of people were constructing make-shift structures for houses in areas that were not designed for residential development (e.g., areas beside freeways and even airport runways).

⁷The South African Rand fluctuated against the U.S. dollar in the range of 3:1 in 1994 to 6:1 in 1998.

⁸Reconstructed from *SA to Z: The Decision Maker's Encyclopedia of the South Africa Market* (Johannesburg: Eskom, 1996).

An electricity program was further seen as a viable option because the country already had an electrical grid in place to supply both residential areas and industry with electricity. In fact, there were approximately 240,000 km of lines currently employed in the country to transmit and distribute electricity. But extensions to the existing electrical grid would undoubtedly be capital-intensive; for example, a 1 km extension of low-, medium-, and high-voltage lines would cost Eskom ZAR40,000, ZAR100,000, and ZAR1,000,000 respectively. Although the line extensions in the electrification process would use mostly low-voltage line extensions, some medium- and high-voltage extensions would be necessary to carry the needed electrical capacity to the areas being electrified. Although Eskom was operating at about 10 MW in excess capacity, the new customers would demand more electricity from the system, wiping out the excess capacity. The company could possibly find itself in the position of having to build more generation facilities and incur the associated capital expenditures in order to meet the new demand that they were in essence creating.⁹

The cost of the program had been estimated at ZAR1.2 billion annually. But Eskom's revenues were ZAR15,417 million, with operating expenditures at ZAR11,864 million, which left the company with a total operating income of ZAR3,553 million at its disposal.¹⁰ The latter meant that Eskom needed to fund the program with approximately 35 % of its operating income annually, which would be an enormous expenditure for the company to make on a project that had an uncertain future. But three factors made the RDP's goals achievable by Eskom:

1. Eskom's policies were determined by the Electricity Council, which was linked closely to the government executive and the finance ministry;
2. Eskom had much experience with generating revenue by issuing bonds on financial markets;
3. Eskom had reserve generation capacity, which meant that capital expenditures for electrification excluded generation equipment, significantly reducing total expenditures.

Given the size of the capital expenditures that Eskom would undertake in the electrification program, the company needed to develop a program that would be affordable, add value to the lives of the people to whom they were providing electricity, and contribute to South Africa's reconstruction.

How to Deliver Service

Because of the possibility of not receiving a sufficient return on their investment, Eskom considered several options for the delivery of electricity. Of these options, two surfaced as being the most viable alternatives: (1) a prepayment metering

⁹One generation facility would cost approximately ZAR16 billion and take several years to build.

¹⁰Eskom annual report (Johannesburg), 1994.

system or (2) fixed-cost connections. In the former case, people pay for electricity before they actually use it, and, in the latter, people pay a monthly fixed fee for unlimited use at a fixed current level. Option (1) would allow Eskom the opportunity to offset the risk of people defaulting on their bills and the costs associated with recovering money owed, and option (2) would allow people to use as much electricity as they needed for growth at a low, fixed monthly fee.

The option of providing fixed-rate connections had already been used in other countries for similar electrification projects because of the lowered capital expenditures associated with being able to distribute electricity with low-voltage lines and not having to supply meters with each connection, which also offsets additional maintenance costs. But would it be possible for Eskom to set an affordable, fixed monthly fee that these consumers, who had variable monthly incomes at best, would be willing to pay each month? Again, the people being connected were struggling with high unemployment and sporadic monthly incomes. Since employment was variable at best, would the average person be able to afford the service that was being provided? If Eskom could develop an affordable monthly fee that people would agree to pay, would these people be willing to switch to a usage-based fee in the future if their electrical demands surpassed the amount of electricity available under a fixed-rate option? On the other hand, prepaid meters would cost more than fixed-rate connections and even more than traditional meters, thereby raising the capital costs associated with the electrification program. The advantage of the prepaid metering system was that consumers could stop using electricity and not pay whenever they did not have sufficient income or even a job.

Tienz now needed to decide which option would be better for the electrification program and why. He had to figure out how to finance a capital-intensive program that was projected to cost approximately ZAR20 billion to complete. So how was Eskom to raise the capital that was necessary for a program that would take ZAR1.2 billion annually? How was Eskom to develop sustainable communities to use the electricity that was being supplied to them?

Appendix 1: Eskom and the South African Electrification Program (A)

Early South African Beginnings

In 1652, an expedition by the Dutch East India Company landed at what is now South Africa to establish a garrison to supply East India ships with fresh water and food. Soon the garrison grew into a colony, and in 1657 the first settlers built their homes on the grazing land of the local indigenous people, which inevitably sparked conflict between these two groups of people in southern Africa.¹¹ In 1660, after

¹¹The Khoikhoi (aka the Hottentots).

winning a number of conflicts with tribes, the Dutch settlers planted a thorn hedge across 6,000 acres of the Cape in order to separate the colony from the tribe.¹² This hedge, used to separate the races, serves as an early symbolic representation of the apartheid doctrine that would come later.

Although these periods of clashes between the white and black South Africans were frequent, there was a fair degree of trading and social interaction between the two groups.¹³ Soon, however, further measures were placed into effect in order to regulate black and white interaction. For example, in 1829, a pass system was implemented to monitor and control the flow of black South Africans into white areas.

Then, as more Europeans settled in the country, stern competition arose between the two races for the limited amount of land and water in the country; this led to more frequent and serious conflicts. The fight for land started in the mid-1850s when 70 % of the white population was forced into black-controlled lands because of the limited land available in white-controlled areas.¹⁴ The white population eventually learned to survive in these areas by dominating and controlling the black populations. The white population felt superior to the blacks, on both the battleground and in farming, and a master-servant relationship came into being with black indigenous people doing manual work for the white population in southern Africa.

The agricultural economy of southern Africa soon turned into one centered upon mining when, in 1867, diamonds were discovered. The master-servant relationship between the black and white populations deepened when the white-owned mines recruited cheap black labor, leading to a huge influx of blacks into white-controlled lands. The whites, to control race interaction, enacted the Native Land Act, granting blacks temporary status to live and work within South Africa. A portion of land was even set aside far from white areas for the incoming black population to inhabit. However, white control went even farther than controlling black populations in the white areas of South Africa. In the early 1900s, the white government went further in their control over the black populations in their midst by placing restrictions on black mobility, education, and housing.

Appendix 2: Eskom and the South African Electrification Program (A)

Beginning of Electricity Supply

It's hard to imagine that one of the far corners of the world was where electricity was first utilized, but given that "necessity is the mother of invention," South Africa's mining industry inevitably called for the use of electricity in the

¹²Louw, L., and F. Kendall. 1986. *South Africa: The solution* Ciskei, South Africa: Amagi Publications.

¹³Louw, L., and F. Kendall.

¹⁴Orpen. Productivity.

mid-1880s.¹⁵ Mining companies installed their own electrical reticulation systems in order to supply electricity to the mines for illumination and power for equipment. These systems soon grew to the point of supplying the nearby cities with electricity, and it was soon recognized that large centralized power stations would supply more reliable and cheaper power than smaller dedicated mining power stations. This eventually led to the formation of the Rand Central Electric Works¹⁶ and the Victoria Falls Power Company in 1906.

Eventually, the Electric Supply Commission (Escom) was established in 1923 in order to supply electricity more cheaply and efficiently to industry and local authorities.¹⁷ In 1937, Eskom's headquarters was the tallest building in South Africa (21 stories tall), indicating the growth that Escom underwent to meet the growing needs of the mining industry. During the boom years after WWII, electrical demand was soaring, and Eskom had met these demands effectively. However, although South Africa was blessed with a wealth of natural resources,¹⁸ the country did not have an adequate water supply, so Eskom recognized that they had to turn to the huge coal reserves to produce electricity. In fact, the coal seams in the country were abundant, thick, shallow, and unfaulted, which meant that extraction costs would be minimal and that these lowered costs could be passed on in the form of cheaper electricity prices.

During the 1960s more coal-fired generation facilities were constructed and Eskom successfully designed dry cooling towers for burning the lower-quality coal that was abundant in South Africa. In the 1970s, future electrical demand and load growth were expected to increase even more, so new facilities (one nuclear plant and several pumped storage plants) were built. However, load growth did not increase as planned, and Eskom was left with a surplus of generation capability at its disposal, which would ultimately lead to Eskom being able to supply even cheaper electricity in the 1990s.

At the end of 1997, Eskom was one of the five largest utilities in the world with total assets equaling ZAR96,894 million, total revenue equaling ZAR20,448, and approximately 40,000 employees.¹⁹ The company supplied more than 98 % of the electricity used in South Africa, which constituted approximately 60 % of the electricity used on the entire continent of Africa. The electricity was generated by 20 power stations with a 39,154 total megawatt capacity. The power was distributed by way of more than 26,065 km of high-voltage power lines within South Africa. Because of the overanticipated electrical demand in the 1980s and the additional generation sites that were constructed as a result, Eskom was operating at a surplus

¹⁵The mining shafts were going deeper into the ground and needed to be ventilated.

¹⁶The first commercially supplied electricity in South Africa.

¹⁷Escom was renamed Eskom in 1987.

¹⁸South Africa has 91 % of the world's manganese reserves, 82 % of its platinum group metals, 58 % of its chrome, and 53 % of its gold. As a result, South African mines are deeper than any other country in the world, at depths of almost 4 km in places (e.g., Western Deep Levels Mine).

¹⁹Eskom annual report, 1997 (Johannesburg).

capacity of approximately 10,000 MW. Moreover, estimates showed that Eskom's surplus capacity would not be exceeded until the year 2007, even with the electrification project and growth in demand for industrial power.²⁰

Appendix 3: Eskom and the South African Electrification Program (A)

The “New” South Africa

After winning the seat of government in the first open elections in South Africa²¹ by receiving 62.5 % of the vote and obtaining 252 of 400 seats in the legislature, the African National Congress (ANC) then sought to implement a plan to make a better life for all.²² Recognizing the need for infrastructure development, they created the Reconstruction and Development Program (RDP) to guide the post-Apartheid state in South Africa. RDP was a socio-economic policy that sought to mobilize all of South Africa's people and resources to eradicate the lingerings of apartheid and build a nonracially based, democratic government and nation. The program consisted of six basic principles and five key programs.

These were the six principles:

1. Maintain an integrated and sustainable program.
2. Center on a people-driven process.
3. Ensure peace and security for all.
4. Embark on nation-building.
5. Link reconstruction and development.
6. Democratize the nation.

The principles were set to be achieved by the five programs:

1. Meet basic needs.
2. Develop human resources.
3. Build the economy.
4. Democratize the state and society.
5. Implement the RDP.²³

However, as the statistics in Tables 2.1 and 2.2 illustrate, the task would not be easy.

²⁰Offei Ansah, Jon. 1995. South Africa: Large energy economy enjoyed by few. *African Economic Digest*, July 31. Although this fact is not emphasized in Eskom's literature, it is likely that this excess capacity may be one of the main reasons why Eskom began electrifying schools and homes as early as 1988 and the early electrification programs in 1990.

²¹April 26–April 28, 1994.

²²“South Africa,” *Hilfe Country Report* (July 1996).

²³The Conference Board, 4.

Table 2.1 Income statistics for different ethnic groups [Constructed from data from *SA to Z: The decision maker’s encyclopedia of the South African consumer market* (Johannesburg: Eskom, 1996)]

	Asians	Colored	Whites	Blacks
% of population (out of 42 million)	3	8	16	73
% unemployment	17.1	23.3	6.4	41.1
Avg. monthly personal income	ZAR1,304	ZAR711	ZAR2,875	ZAR294
Avg. spent monthly on food/housing	ZAR871/R640	ZAR521/R275	ZAR1,072/R827	ZAR251/R28

Table 2.2 South African
statistical indicators
(SA to Z: The decision
maker’s encyclopedia
of the South African
consumer market)

GDP	ZAR433 billion
GDP/capita	\$3,004
Unemployment	32.6 %
Inflation	12.5 %
Interest rate	18.4 %

**Appendix 4: Eskom and the South African
Electrification Program (A)**

Early Social Investment by Eskom

During the apartheid era, before the electrification program, an estimated 98 % of all white households had electricity; 80 % of black households lacked it.²⁴ In addition, the power that was sold to blacks was subjected to highly arbitrary rates. Eskom acted as a wholesaler of electricity to approximately 450 municipalities, which were typically white-controlled under the apartheid system. Because of the number of municipalities involved, over 2,000 different rate structures were constructed. In some areas, like Soweto, on the border of Johannesburg, black residents were paying double the rates of nearby whites within Johannesburg proper. Moreover, it could be argued that the electrical service for black areas was of much lower quality than for white customers: “If the power went out, you could wait a week, a month or even longer for a crew to show up.”²⁵ Thus, Eskom’s history of corporate social investment (CSI), not surprisingly, was racially directed.

²⁴“South Africa: Large energy economy enjoyed by few, “*African Economic Digest* (July 31, 1995).
²⁵Adams, Peter, and Eskom Spokesman, in Bob Drogin, “South Africa bringing power to the people,” *Los Angeles Times*, January 31, 1996, A1.

In 1985, anticipating the likely changes in the apartheid regime,²⁶ Eskom committed to cultural change. It initiated an affirmative action program to create contact between the races and by the 1990s began to recruit talented black personnel into executive positions. In 1988 it launched its “New South African” program, a corporate social investment (CSI) program initially funded with ZAR4 million. About two-thirds of this budget was initially spent on electrifying 10 schools per year in Soweto. The rest of the budget was largely spent on funding education-oriented, nongovernment organizations, which sought to improve the educational conditions in poor, black regions.²⁷

Moving to alleviate further some of the problems associated with the Apartheid system, Eskom accelerated its investments in electrification and expanded beyond schools to an “Electricity for All” program. At the end of 1990, it launched this program with the philosophy that economic development within South Africa’s black communities would not occur until they had access to electricity. However, there were no accurate statistics on the proportion of the South African population that lacked electricity, and there was no accurate database of housing in South Africa. Accordingly, Eskom’s first task was to compile housing statistics to determine the extent of electrification in South Africa’s urban and rural areas. Results showed that out of 7.2 million homes in South Africa, only three million had access to electricity: i.e., approximately 23 million people – just over half of the population of South Africa at the time – were without electricity.^{28,29} Almost all of these homes were in black impoverished urban, township, and rural regions.

Eskom piloted the first electrification program, and by the end of 1991, Eskom succeeded in connecting 31,000 residences to the electrical grid. Eskom worked with local government councils and offered incentives to regions if they could electrify homes in their areas. Viewed as a success, the program continued, connecting an additional 159,000 homes in 1992 at an average cost per connection of ZAR2,600. At the end of 1992, approximately 1 million black South Africans had been connected to the grid and over 260 electrification projects were underway. Eskom recognized that mere connections were not all that the poorer people in South Africa needed in order to have access to electricity. The company made it their goal to reduce the “real price”³⁰ of electricity in order to stimulate economic growth and provide an affordable service to their new customers. Eskom had achieved substantial momentum in electrification just at the time when political power was changing hands in South Africa.

²⁶See Elling Njal Tjonneland. 1989. *Pax Pretoriana: The fall of apartheid and the politics of regional destabilization*. Uppsala, Sweden: Scandinavian Institute of African Studies.

²⁷Alperson, Myra. 1995. *Foundations for a new democracy: Corporate social investment in South Africa*. Johannesburg: Ravan Press, 70.

²⁸Eskom, “Bringing power to the people,” video prepared for the Edison Electric Institute, 1996.

²⁹Drogin, “South Africa bringing power to the people.”

³⁰Eskom’s goal was to produce and distribute the cheapest electricity in the world.

Appendix 5: Eskom and the South African Electrification Program (A)

Eskom's Commitment to the RDP

John Maree³¹ wrote in Eskom's 1992 annual report:

As the new South Africa becomes a reality, large organizations will need to have relevance to our society and demonstrate that, through the conduct of their business, they bring value, not only to their own stakeholders, but also to the wider society. Their products and services will have to meet the emerging consumer needs and contribute to the well-being and progress of the community and particularly the disadvantaged.

Access to electricity was identified as one of the top two needs of the citizens of the country. Eskom's early electrification efforts had been embraced by the new government, and the electrification of homes was identified as one of the most important aspects of the "meeting basic needs" program. An accelerated and sustainable electrification program was planned to provide access to electricity for an additional 2.5 million households by the year 2000, thereby increasing the level of access to electricity to about 72 % of all South African households, double the 1992 number of households with access to electricity. Eskom would play a major role in meeting the goals set out by the RDP, and these goals became central to Eskom's electrification goals. Eskom's 1995 stated goals based on the RDP were:

1. Further reduce the real price of electricity by 15 %, to become the world's lowest-cost supplier of electricity.
2. Electrify an additional 1,750,000 homes, improving the lives of 11 million South Africans.
3. Change the staffing profile so that 50 % of management, professional, and supervisory staff are black South Africans.
4. Educate, train, and upgrade sufficient numbers of people to meet Eskom's future managerial, technical, and other professional staff needs, by employing 370 black trainees and bursars per year and enabling all Eskom employees to become literate.
5. Maintain transparency and worker consultation in decision-making.
6. Contribute ZAR50 million per year to electrification of schools and clinics, and other community development activities, particularly in rural areas.
7. Enable all Eskom employees to own a home.
8. Encourage small and medium enterprise development, through Eskom's buying policies and give managerial support.
9. Protect the environment.
10. Finance the above from Eskom's own resources and from overseas development funding.

³¹Chairman of the Electricity Council.

Because the company believed that electricity was a vital part of modern life and that it would encourage economic growth within the newly electrified areas, Eskom committed to the RDP goals of electrifying approximately 2.5 million of the 4.2 million homes (60 % of the people without electricity) through both grid and non-grid (solar) connections. The remaining number “would be difficult to electrify due to either structure of the dwelling, the distance from the existing grid, access to alternative energy sources, or simply as a matter of affordability.” Other reasons why Eskom proclaimed commitment were: (1) the standard of living improved through access to hot water, stoves, and TV; (2) gender-specific roles could be revamped (e.g., time previously spent on collecting firewood could be used for other goals); (3) educational standards improved by access to lighting; and (4) health standards improved through access to refrigeration, since food and medicines could be kept handy and since smoke from cooking fires could be eliminated.³² The company cited Japan, Taiwan, and Korea as “winning nations,” and stated “economic growth could not reach impressive figures before the overwhelming number of homes in the country had electricity.”³³ In addition to electrifying 300,000 homes per year until the year 2000, Eskom also made a pledge to reduce the price of electricity in real terms by 15 % by the year 2000 in order to provide the newly connected homes with an affordable service. The latter is in keeping with Eskom’s overall vision of offering the lowest electricity rates in the world.³⁴ All such goals stem from Eskom’s belief that little economic growth can occur without the widespread use of electricity.

In 1994, it was estimated that the electrification program would cost around ZAR12 billion (approx. USD3.5 billion), with annual investments peaking at around ZAR2 billion.³⁵ How would it be possible to implement such a large social investment project in a viable manner? Although Eskom was producing the lowest-priced electricity in the world at the time and was operating at an excess capacity, the capital expenditures that would be incurred would be astronomical. Moreover, given the history of apartheid, the people they were going to provide electricity to had become dependent on other sources of energy³⁶ for their daily needs. Was there a guarantee that these people would use the electricity when it was supplied to them? The unemployment rate in South Africa also lingered at approximately 45 %, and there was a history of “nonpayment” among the black population,³⁷ so how was Eskom going to implement a system that would lower the risk on return for their investment?

³²Eskom, Eskom Corporate Profile, 1995.

³³Eskom.

³⁴Stephan, Rob. 1996. Challenges and innovations facing Eskom. *Transmission & Distribution World*. January 1996, 30.

³⁵African National Congress. 1994. *The reconstruction and development programme: A policy framework*. Johannesburg: ANC, 31.

³⁶Paraffin, coal, candles, dung, and wood.

³⁷Used as a protest against the apartheid government. See Eskom B case.

Eskom and the South African Electrification Program (B)

A Culture of Nonpayment

During the apartheid years, there was a great deal of conflict between the black South Africans opposing the established government and the military and police of South Africa. The conflicts ranged from public demonstrations to covert ANC bombings. One of the most commonly used forms of protest against the apartheid state was the consumer boycott, when blacks used nonpayment as a form of protest against the government. The idea behind nonpayment was to withdraw support of the infrastructure that the apartheid government had forced upon black South Africans. Black South Africans boycotted rent, electricity, and consumables.

Boycotts started during apartheid as a method supported by the African National Congress (ANC) to undermine the South African government and spread widely through the poor population that was eager to avoid paying for anything out of their scarce incomes. Boycotting went further, when local authorities would typically respond by cutting off services to the areas boycotting payment. The residents of these areas naturally adapted by pirating the services (tampering with the electrical grid and water system) that were being denied them.³⁸ Many of the problems that the new South African government faced were a result of the past boycotts that they helped to support.

In fact, ANC members of government, who had anticipated the use of nonpayment to stop as soon as power was democratically held in the country, openly called for an end to the boycotts when the nonpayments were threatening the supply of services on a national scale. But a culture of nonpayment had permeated the country. It threatened the development of the new South African government and the RDP campaigns, and it also inhibited foreign investment when companies from abroad recognized the risk of negative returns on investments.³⁹ The government implemented extensive educational reforms in order to help the citizens recognize the need of payment for services.

In early 1999, Eskom executive Charles van Rooyen was assigned the task of determining what to do about Eskom being owed a total of (South African Rand) ZAR1.5 billion by black municipalities that had not paid for service during apartheid and that further nonpayment would hinder the electrification program.⁴⁰ Although van Rooyen remembered that the company had historically approached the problem of nonpayment with the threat of cutting off the power to municipalities, he soon decided that this policy was not viable for a number of reasons. First, there

³⁸ Johnson, R. W. 1997. Riots and bulldozers return to townships. *Overseas News-New York Times*, August 9, 1997.

³⁹ "Africa and Latin America," *BBC Weekly Economic Report*, Part 5, March 21, 1995.

⁴⁰ Kevin Morgan, legal adviser to the South African National Electricity Regulator, in an interview with *Africa News*, August 9, 1996.

was a question of equity and fair treatment of the people living within those communities who *were* paying their bills. Would it be fair to remove access to a service for which these people had in fact paid? Second, the effects of the apartheid regime were now more noticeable, and the company was committed to helping these people improve their living standards. Third, past action by municipal authorities against nonpayment had led to riots and violence. So van Rooyen had the difficult dual goals of both realizing a return on the company's investments *and* contributing to the quality of life of the citizens of South Africa.

Eskom and the South African Electrification Program (C)

Residential Tampering

Muenda,⁴¹ one of Eskom's top managers, looked at the figures and couldn't believe what he was seeing. On average, as much as 40 % of Eskom's prepaid connections had been tampered with, and this led to a loss in revenue amounting to (South African Rand) ZAR300 million annually.⁴² This wasn't surprising to him considering that even children in the sixth grade knew how to pull electricity illegally off the electrical grid. In fact, they could even demonstrate how the recoil would knock a person down if a mistake happened while tampering with the grid (many had been electrocuted while tampering).⁴³ During apartheid, the South African people living in these communities had learned that, in addition to not paying for services, they could further undermine the local white authority by tapping into the electrical grid and drawing service for free.⁴⁴

Muenda looked again at the numbers and determined that it would be cheaper for the company to connect these people to electricity and not charge them for usage.⁴⁵ The cost per connection averaged ZAR3,000, and Eskom performed 1,000 connections on a daily basis, which amounted to approximately ZAR1.095 billion annually. Muenda decided to calculate the present value of this venture and determine the payback period, which would be a bit more complicated than simply looking at the overall costs and revenues associated with the program. In order to offset illegal draws from the grid, Eskom would have to go through the additional expenditures of monitoring the grid. Not only would Eskom have to pay for the man-hours and expenses associated with inspection, but many times these employees were attacked or had their

⁴¹Fictitious Zulu name.

⁴²Robyn Chalmers. 1998. Meter tampering costs Eskom R300m. *Africa News*, May 21, 1998, <http://www.africanews.com>.

⁴³Keller, Bill. 1993. Township gets electricity (and it's free, too). *New York Times*, September 1, 1993.

⁴⁴Boycotting payment for service as a protest of the apartheid government.

⁴⁵Interview with Paul Maree (Eskom manager for the Electrification Program).

cars hijacked in the areas they were inspecting, which was by itself a valid argument for supplying fixed-rate connections because of concern for employee safety.

After examining the figures again, Muenda discovered that, although the total annual sales per customer receiving electricity was ZAR96, the total annual operating cost per customer was ZAR104. Therefore, the excess costs of collection, maintenance, and inspection due to nonpayment and tampering reduced Eskom's return to a negative ZAR8 per customer. In other words, Eskom would not only absorb the initial capital expenditure of ZAR3, 000 per customer to connect people to electricity, it would also incur a ZAR8 fee annually for each customer connected to the electrical grid under the electrification program.

According to his figures, the program was providing the company with a return on its investment, even several years after the project began. In fact, Muenda determined that it would simply be more cost-effective for the company to give electricity away for free and thereby lower the costs associated with billing, maintenance, and metering equipment. But the company had not only committed to the RDP goal of electrifying 1.75 million households by the year 2000, but it was also attempting to foster a responsible culture of payment within the consumer base.⁴⁶

Muenda wondered if he should recommend that the company stop the electrification program until his group could plan a way to generate adequate revenue from the consumer base. Although the costs of the program were increasing because some of the residents were tampering with their connections, there were people who were managing their connections responsibly within their communities and had been paying their bills. Would it be fair to these responsible consumers to stop the electrification program because of the people who were irresponsible? Should these responsible people be denied access because of what others in the community were doing?

From a theoretical perspective, it was easy to determine that it would not be fair to deny electrical connections to future responsible consumers because of the previous irresponsible behavior of some customers. But what was Muenda to do when he found hundreds of illegal connections coming off the grid in a community? The question of who was responsible, the individual or the community at large, became difficult to answer in this situation. Should Eskom disconnect the entire community?

Eskom and the South African Electrification Program (D)

Training to Tamper

Ralph Withers⁴⁷ was reading the newspaper, and he noticed the headline stating the unemployment rate for black South Africans currently hovered at 41.1 % of the total

⁴⁶See "Eskom and the South African Electrification Program (A)" (E-0162).

⁴⁷Fictitious name.

population in South Africa.⁴⁸ He remembered the issue of poverty recently being addressed by the African National Congress (ANC):

Poverty is the single greatest burden of South Africa's people and is the direct result of the apartheid system and the grossly skewed nature of business and industrial development that accompanies it. Poverty affects millions of people, the majority of whom live in the rural areas and are women. It is estimated that there are at least 17 million people surviving below the minimum living level in South Africa, and of these at least 11 million live in the rural areas. For those intent on fomenting violence, these conditions provide fertile ground.⁴⁹

In order to improve the quality of life for all South Africans, the poorer citizens needed help taking control of their lives. Part of the government's strategy to promote this empowerment was to improve living conditions, boost production, raise household income through job creation, and create opportunities for all citizens to sustain themselves. In fact, it was understood that job creation was specifically linked with public works projects and other projects aimed at meeting people's basic needs. Therefore, job creation was a primary focus of the ANC government, and Withers, a manager at Eskom, recognized the role that Eskom could play in the process.

With this in mind, Withers recommended that Eskom use local labor as part of the electrification process. By providing people with basic electrician skills, he was attempting to meet the problem of unemployment in South Africa. People trained in basic electrical wiring and repair would be paid for assisting in the electrification process of the surrounding areas. Although they would not be full-time employees with Eskom, because others would be trained to assist with the electrification process in their respective areas, these people would have marketable skills to help them procure jobs and start small businesses within their communities. As load growth and electrical demand increased in newly electrified areas, people would start to use more electrical appliances, creating a market for the repair and resale of these appliances, which would provide employment for the people trained by Eskom.

Withers was astonished to learn that, although illegal connections had been discouraged, electricity was being consumed by people had not purchased tokens for their prepaid meters. To find out what was going on, Withers chose pilot sites and placed meters on the connections going into these communities to determine how much electricity was going into the community in a given period of time. Then he looked at electricity sales for that community for the same time period and compared the amount of electricity going into the sales of electricity. He soon determined that tampering was prevalent in almost all of the communities that had been electrified – as high as 80 % in some areas.⁵⁰ And that was not all: Withers also noticed that the people who had been trained and paid to assist in the electrification

⁴⁸ *SA to Z: The decision maker's encyclopedia of the South African consumer market* (Johannesburg: Eskom, 1996).

⁴⁹ Section 2.1.1 of *The Reconstruction and Development Programme*, African National Congress, 1994.

⁵⁰ Soweto, South Africa.

process had actually been stealing electricity from Eskom. In other words, he had inadvertently trained people to steal from the company. These people would approach their neighbors and bypass prepaid meters for small fees, thereby providing free electricity to the people who would pay for illegal connections.

This situation only compounded the problem that Withers had encountered with residential tampering. If the company decided to continue with the electrification program, what type of message would the company be sending the residents when Eskom employees themselves were aiding in the illegal tampering? The purpose of training local laborers in the electrification process was to help curb the high unemployment rate for black South Africans. Withers wondered if Eskom should continue to train, pay, and use local labor in the electrification process. The company already had approximately 40,000 employees operating in a country that was little more than twice the size of Texas,⁵¹ which meant that it had the existing infrastructure to perform the electrification process on its own without training and employing local labor. In fact, it even cost Eskom an additional amount on top of the electrification process to train these people at all. But now these same people were helping to steal from the company. Obviously, this type of employee behavior was driving the costs of operation even higher. But was providing people with marketable skills and curbing the unemployment rate more important than lowering the costs involved? How could Withers and his group achieve both?

Eskom 2013 Case Addendum

Since 1991, Eskom has connected over 4.2 million homes to the electricity grid, largely on a prepaid metering system, and it has provided non-grid access to 38,000 others. Many of these are extremely low-income homes—adding three million customers between 1994 and 2004 only increased Eskom's sales by 4 %, though industrial sales growth in the same period was 14 %.⁵² In 2001, the South African Department of Energy began funding the Integrated National Electrification Programme (INEP), which Eskom implements on the department's behalf, and the company sponsors many of the new connections.⁵³

In late 2007, Eskom received widespread criticism when demand for electricity exceeded supply forcing the company to introduce rolling blackouts, wherein certain sections of South Africa would be disconnected from power for 2 h at a time. The rationing seriously impacted several industrial sectors, such as mining.⁵⁴

⁵¹Total area of 471,000 mi² as compared to 270,000 mi².

⁵²Winkler, Harald, and Andrew Marquand. 2009. Changing development paths: From an energy-intensive to low-carbon economy in South Africa. *Climate and Development*.

⁵³http://financialresults.co.za/2012/eskom_ar2012/fact-sheets/010.php. Accessed 10 June 2013.

⁵⁴<http://www.guardian.co.uk/world/2008/jan/26/southafrica.international>. Accessed 10 June 2013.

Though Eskom has not resorted to such measures again since April 2008, some worry 2013 might see additional issues with the power grid, as the company continues to operate with a buffer of only 1 % of its capacity.⁵⁵

The abundance and affordability of coal in South Africa has created few incentives for Eskom to move away from carbon-intensive energy generation, but it has recently partnered with the World Bank on the Eskom Renewables Support Project, a \$1.2 billion initiative that will fund both a 100 MW wind plant and a 100 MW concentrated solar plant.⁵⁶

Eskom is targeted to create an additional 724,000 connections over the next five years. At the current INEP funding rate, universal access to electricity is slated for 2033, though Eskom believes that, with additional resources, the goal could be reached by 2020.⁵⁷

The Volta River Project⁵⁸

In 1998, Ghana needed to consider new alternatives of electricity to counteract the recurring problem of power shortages due to droughts. With guidance by lessons from the past, the new alternatives would need to be practical, affordable, and sustainable choices for electricity in Ghana. The options included (1) thermal energy, (2) importing electricity, (3) construction of additional hydroelectric dams, and (4) other options such as nuclear energy, solar energy, and other fossil-fuel-powered plants and generators.

Introduction

March 6, 1997, marked the fortieth anniversary of Ghana's independence from British colonial rule. During the early years, Kwame Nkrumah, Ghana's first elected president, was keen on establishing Ghana's economic independence. In conjunction with multinational interests, his government oversaw the construction of Akosombo Dam on the Volta River. Akosombo would become the primary power source for the nation (Fig. 2.1). Nkrumah believed that industrialization was

⁵⁵<http://www.iol.co.za/business/companies/eskom-may-resort-to-blackouts-this-winter-1.1504409#.UbYE9HDo9xM>. Accessed 10 June 2013.

⁵⁶<http://www.worldbank.org/projects/P122329/south-africa-eskom-renewables-support-project?lang=en>. Accessed 10 June 2013.

⁵⁷http://financialresults.co.za/2012/eskom_ar2012/fact-sheets/010.php. Accessed 10 June 2013.

⁵⁸This case was prepared by John Riverton under the supervision of Patricia H. Werhane. Copyright © 1999; The Addendum was written by Tim Rolph, Copyright 2013 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved.



Fig. 2.1 Akosombo Dam

dependent on ample and affordable electricity. Forty years later, the “miracle dam” was not able to supply enough power to meet energy needs in Ghana.

The Volta River Project was the name given to the association of the Volta River Authority (VRA), Ghana’s statutory power provider, and the Volta Aluminum Corporation (Valco) whose power-intensive aluminum smelting operations justified the construction of the dam. Valco, which is 100 % owned by U.S. interests, lobbied heavily with the Ghanaian government and other contributors to see the speedy completion of the dam between 1963 and 1966. Although Akosombo Dam was a tremendous engineering feat which became a symbol of national pride, the effects of dam construction, the consequences of contractual negotiations and agreements with Valco, and Ghana’s dependence on hydroelectric power continually resurfaced as Ghanaian policy-makers faced the challenges of meeting a growing power demand. During the worst droughts, water levels were not sufficient to generate enough power to meet Ghana’s energy needs. Although other energy alternatives were considered, and some were implemented, Ghana’s power infrastructure was dependent on the rise and fall of the water level in the Akosombo reservoir. Ghana’s power infrastructure needed to change.

History of Ghana Before the Volta River Project

During the 1400s, the Portuguese were the first Europeans to arrive in what is known today as Ghana. Their primary objective was gold exploration. The Portuguese gave the name “Gold Coast” to the territory because of its wealth of gold and other natural resources. In 1482, they constructed Elmina Castle near Cape Coast; this castle would later become the last stopover for thousands of slaves before they were shipped to the new world. Between 1471 and 1957, several other European kingdoms explored the Gold Coast. Among these were Denmark, Holland, England, Prussia, and Sweden. They constructed elaborate castles and forts, to establish and protect their presence in the territory. When the British merchants arrived en masse during the 1700s, they sought to capitalize on natural and human resources: gold and slaves. The slave trade continued until the late 1800s when it was abolished in

the western nations. The British finally colonized the territory in 1874; British colonial rule continued from 1874 until 1957, when the Gold Coast gained independence and became the Republic of Ghana.

In 1914, Sir Albert Kitson, director of the Gold Coast Geological Survey, discovered bauxite deposits near Mpraeso. Bauxite is a mineral ore containing aluminum oxide or hydroxides with several impurities. When refined, bauxite becomes alumina, the principal ingredient for aluminum production. The following year, while engaged in a rapid canoe voyage down the Volta, Kitson observed that the river flowed through a gorge surrounded by a large range of hills near Akosombo. He was the first person recorded to envision a dam at that location. Kitson's infrastructure proposals were not limited to Akosombo. He also identified Bui, on the Black Volta, as a second feasible site for a dam. He felt that a dam at that location, near the mid-western border of Ghana, would serve to electrify a future railway to the north.⁵⁹

A Yorkshireman by the name of Duncan Rose would later carry Kitson's dream closer to reality. After graduating from Cambridge in 1930, Rose emigrated to South Africa to pursue his fascination with aluminum. He thought aluminum could be the metal of the century.⁶⁰ When he came across Kitson's bulletin in the public library at Johannesburg, Rose planned an exploratory trip to the Gold Coast. Working with his financing partner, T.W. Charles, Rose acquired the support of the Anglo-Transvaal Consolidated Investment Co., a leading South African mining finance house. Together, they formed the African Aluminum Syndicate, which would later be joined by a South African engineer by the name of Christopher St. John Bird. By 1939, St. John Bird was in the Gold Coast preparing preliminary reports while Rose was negotiating concessions for dam construction with the Gold Coast government.

World War II caused the Syndicate to suspend its physical operations in the Gold Coast. Rose left for duty in England to manage a munitions factory; however, while in England, he vigorously lobbied for support of the Gold Coast aluminum scheme in both government and business circles. Among his investor targets was British Unilever. After the war, momentum for the dam continued to build in the Gold Coast. Rose formed West African Aluminum Ltd. (Wafal), which replaced the pre-war African Aluminum Syndicate. One indication of the growing success of the proposal was that in March 1946, Unilever, through its subsidiary, the United Africa Company, acquired financial interest in Wafal.

More on Colonial Interests

In 1949, Christopher St. John Bird and Duncan Rose were compiling proposals for the aluminum-hydroelectric dam. They reasoned that, since the land on the banks of the Volta River was of "low value," the dam, which was then estimated to cause about 5,180 km² (2,000 mile²) of flooding, would not have a significant negative

⁵⁹Moxon, James. 1984. *Volta, man's greatest lake*. London: Deutsch.

⁶⁰Moxon, *Volta*, 52.

impact on the country. As retribution, St. John Bird suggested that a sum of £1 million be given to the Gold Coast government.⁶¹

St. John Bird had been a partner in an engineering consulting firm in South Africa before coming to the Gold Coast. His proposals were basically “apartheid” in nature.⁶² In his plans for the Akosombo village, the European executives and senior workers would have their homes constructed on a ridge where they would enjoy a cool breeze. Their living area would include tennis courts, a swimming pool, and a dance hall, among other recreational amenities. The African workers would live in the valley within a mile of the humid riverbanks, where they would be closer to the work site. St. John Bird suggested constructing aluminum houses for the African laborers because those houses “would prove palatial in comparison with the local product.”⁶³ The Europeans would be paid 14–25 times the salary of the African workers. The African laborers would be paid according to their skills and technical worth to the project. In his original proposals, no concessions were made for hiring Ghanaian managers or technical experts. St. John Bird anticipated that only a few Ghanaians would hold low-level management positions.

The White Paper Cmd 8702 of November 1952 illustrated the United Kingdom’s mental model for the association between aluminum and hydroelectric power in Ghana. This document, bearing the title, “The Volta River Aluminum Scheme,” strongly suggested that hydroelectric generation was more for the purpose of cheap electricity for aluminum production than for Ghanaian electrification. The preliminary plans presented in this document involved the production of 564 MegaWatts (MW) of power, of which 514 MW would go to the smelter and 50 MW to other users in Ghana.⁶⁴ As a part of the “scheme,” the smelter would be obligated for 30 years to sell at least 75 % of the metal produced to buyers in the United Kingdom.

The White Paper concluded that:

Her Majesty’s Government in the United Kingdom [is] favorable in principle to participation in the scheme, which would further their policy of encouraging the development of the resources of the [Gold Coast] as well as contributing to the raw material needs in the United Kingdom. They believe, on the basis of the information so far available, that it is soundly conceived [and] that its successful completion would bring substantial benefits to the two countries.⁶⁵

Back in Ghana, the British Aluminum group (Wafal) and Aluminum Ltd. of Canada (Alcan) were actively compiling final reports from site investigations. During the preparation of these reports, African rights activist Kwame Nkrumah was released from prison. Nkrumah had been sentenced to two years for demonstrations surrounding his political action campaign, in which some demonstrators had died. Before the Gold Coast government could approve the Wafal-Alcan reports, the political climate changed.

⁶¹Hart, David. 1980. *The Volta river project*. Edinburgh, U.K.: Edinburgh University Press.

⁶²*The Volta river project*, 35.

⁶³Hart, *The Volta river project*.

⁶⁴Hart, *The Volta river project*, 36.

⁶⁵Hart, 37.

Nkrumah and the Volta River Project

In 1951, soon after his release from prison, Kwame Nkrumah's Convention People's Party (CPP) swept the polls at the February general election. He was appointed governor-general (a post that later became prime minister) of the Gold Coast under the Queen of England. The CPP became the first African-majority government to hold power in colonial Africa.

Nkrumah had started his career as a teacher before going abroad for 10 years to attend the London School of Economics and later Lincoln University and the University of Pennsylvania in the United States. Returning to Ghana, Dr. Nkrumah soon found his way among the intellectual elite. He believed that the key to securing African solidarity and independence from colonial rule was a unified Africa. One of the more revolutionary ideas Nkrumah held with other African leaders was forming a confederation of African nations and adopting Swahili as a continental language to unify all African peoples, and in 1963 they formed the Organization of African Unity (OAU). Some believe that Nkrumah wanted a more powerful, centralized structure where he could dominate continental politics. Much of his thinking was based on socialist theory and represented a unique blend of Christian and Marxist ideas.⁶⁶

While president, Nkrumah emphasized the importance of diverse foreign investment in Ghana and national electrification as necessary precursors for development. He had embraced Kitson's vision of a dam at Akosombo in hopes of developing Ghana's bauxite reserves, among other interests. Nkrumah knew that involving an aluminum smelter was the only way to secure finances for the construction of Akosombo Dam.

Nkrumah maintained working relations with the Soviet Union and Red China as well as the West, while he solicited foreign investment to boost the economy of the newly independent Ghana. Nkrumah's government was overthrown in 1966 by a coup which occurred after the commissioning of Akosombo Dam. Suspicion of American involvement was verified when the *New York Times* published that "the CIA advised and supported the Ghanaian Army and police officers who took over the Government."⁶⁷ Before the coup, many Ghanaians had criticized Nkrumah for focusing too much on foreign policy and not enough on the needs of his own country, while others believed that these allegations were disseminated in CIA propaganda.⁶⁸ Nevertheless, African leaders were disappointed after his overthrow because Nkrumah's efforts for the cause of pan-African unity had brought about economic, social, and political benefits to the entire continent. Ever since Nkrumah had led Ghana to independence nearly 10 years before his overthrow, many other African colonies had taken steps toward achieving their own independence.

⁶⁶Hart, *The Volta river project*, 6.

⁶⁷Moxon, *Volta*, 270.

⁶⁸Moxon, *Volta*, 270.

Aluminum and Hydroelectric Power

Refining aluminum from bauxite ore is an energy-intensive process. Bauxite is a mineral ore containing aluminum oxide or hydroxides with several impurities. Bauxite must be treated at a high enough temperature (around the melting point of aluminum: 660 °C/1,220 °F) to burn away all the impurities and leave behind the resulting alumina powder. When molten alumina is processed into marketable aluminum, it must be cooled at a slow rate to increase ductility and prevent a brittle product. Generating one six-pack of aluminum cans requires the same amount of electricity as running a 21-in. color TV for more than 11 h.⁶⁹ By 1998, the annual hydroelectric power used worldwide in aluminum production nearly equaled the annual power demand of Australia, or of about 35 million U.S. residents. On average, electricity accounted for about 20–30 % of the total cost of aluminum production.

Electrical energy, rather than direct heat (i.e., from burning fossil fuels), is the best form of energy for aluminum processing. Because aluminum is a poor current conductor, the electrical current is trapped and converted to heat energy. High electrical currents are required to perform the smelting operations.

Due to the high power costs associated with making aluminum, manufacturers usually seek the least expensive sources of power. During the 1960s and 1970s, world energy costs increased by 500 %, while serious doubts arose about the safety of nuclear power, which had once been a cheap and reliable power alternative for the aluminum industry worldwide.⁷⁰ Hydroelectric power was soon regarded as the next cheapest alternative for generating electricity. Throughout history, aluminum smelters have frequently been established in conjunction with new dams.⁷¹

Volta Aluminum Company (VALCO)

Valco was the name of the aluminum company associated with the Akosombo Dam. During preliminary negotiations in Ghana in the early 1960s, Valco representative Edgar Kaiser commented that Ghana's rich bauxite resources were part of the reason for the company's interest in Ghana.⁷² President Nkrumah saw the link between aluminum and hydroelectric power as the best way to bolster Ghanaian economy. Furthermore, the presence of an aluminum smelter justified the construction of a hydroelectric dam to the foreign investors.

⁶⁹Gitlitz, Jennifer. 1993. The relationship between primary aluminum production and the damming of the World's rivers. International Rivers Network (IRN) Working Paper #2 (August 1993).

⁷⁰Graham, Ronald. 1986. Structural problems in the World economy: A case study of the Ghana-Valco renegotiations. In *Essays from Ghana-Valco renegotiations*, ed. Fui S. Tsikata. Accra: VRA, pp. 87–111.

⁷¹Gitlitz, "The Relationship."

⁷²Tsikata, Fui. Dealing with a transnational corporation. *Essays from Ghana-Valco Renegotiations*, 1–14.

Kitson's vision for developing Ghana's aluminum industry was the framework around which Valco was established. A more wealthy country was invited to provide loans for the power infrastructure, establish a bauxite refinery and an aluminum smelter, and develop the local bauxite. It was a mutually benefiting design with very good intentions toward the host country. A host country that did not have the necessary infrastructure could cash in on an undeveloped natural resource, while a percentage of the production sales helped the foreign aluminum company liquidate their investments. It was envisioned that, after an agreed period of time, the contract would expire and the entire operation would be turned over to the host country.

In fact, ultimately Valco opted not to construct the bauxite refinery, because Kaiser's economists found that, for the time remaining on their contract, it was more profitable to continue importing alumina powder from Jamaica and Guinea than to invest high initial capital in a bauxite refinery in Ghana. Valco tests concluded that because of the impurities in Ghana bauxite, the same amount of energy would yield less alumina than bauxite refined elsewhere. The forgone bauxite factory left the Volta River Project vision incomplete, and Ghana's bauxite reserves untapped.

Valco would be 100 % owned by foreign interests, both of which were among the six most powerful corporations in the aluminum industry. One was Kaiser Aluminum Corporation (Kaiser, NYSE: KLU) of Houston, Texas. Kaiser, which would become one of the world's leading producers of alumina, primary aluminum, and fabricated aluminum products, owned 90 % of Valco. Kaiser would later be supported by MAXXAM Inc. (ASE: MXM), which directly and indirectly held about 78 % of the common stock. Kaiser's remaining 12 % belonged to other private interests. Reynolds Metal Company owned the other 10 % of Valco. The Valco smelting operation was designed as a service facility or a tolling station because it actually would not own any of the alumina or aluminum that it processed. Imported alumina was passed through the plant, processed at a fee, and exported for sale.

Valco would become the single largest consumer of electricity in Ghana. During the 1970s Valco consumed some 60 % of Ghana's electricity to produce 200,000 t of aluminum annually.⁷³ In July 1982, when a second smaller dam (Kpong Dam) was built downstream on the Volta River at Akuse, VRA's maximum electricity-generating capacity increased by 20 % to a total of about 1100 MW. By 1993, Valco consumed about 45 % of VRA's power production. Valco hired about 2% of the Ghanaian private sector labor force.⁷⁴

Negotiating a Dam

Nkrumah needed President Kennedy's support in 1961 to bring international financial investors to the negotiating table. Beyond the financial needs for the Volta River

⁷³Berry, LaVerle. ed. 1995. *Ghana: A country study*. Washington, D.C.: Federal Research Division, Library of Congress, 176.

⁷⁴Sims, Rod, and Louis Casely-Hayford. Renegotiating the price and availability of energy. In *Essays from Ghana-Valco renegotiations*, ed. Fui Tsikata, 16.

Project, Nkrumah wanted to attract foreign investors to Ghana and establish a foundation for future development of other infrastructure, such as the Bui Dam. While the West was involved in building Akosombo Dam, the Soviet Union, after performing extensive investigations, was prepared to undertake construction of the Bui Dam. James Moxon, an Englishman who joined Ghana's Information Service in 1948 and worked closely with Volta River Project participants, suggests that Nkrumah used the Bui dam to maintain "some kind of political balance between the West and the East." In 1961, Nkrumah successfully completed a 2-month visit to Khrushchev and Mao Tse-tung, became the Kennedy family's first visiting head of state at the White House, and hosted Queen Elizabeth and Prince Philip in Accra.⁷⁵ With the support of President Kennedy, negotiations for the Volta River Project began.

In February 1962, over 20 agreements were signed concerning the financing, construction, and operation of Akosombo Dam. The parties represented in the negotiations included (1) the Ghana government and its agencies, (2) Valco and shareholders, (3) the International Bank of Reconstruction and Development (IBRD/World Bank), (4) the U.K. Government, and (5) some U.S. government institutions that insured U.S. corporations operating outside the United States.

Ghana's budget provided £35 million in cash (\$98 million in 1962 dollars), which was half of the building costs for Akosombo Dam; the remaining finances consisted of loans from the World Bank, USAID, U.S. Export-Import Bank (EXIM), and the U.K. Board of Trade.⁷⁶ Valco shareholders gave \$32 million for the building of the smelter, and another \$20 million came as loans for other initial capital expenses required to establish aluminum operations in Ghana (see Exhibit 1: Principal Agreements).

The Ghana government and the Volta River Authority (VRA) agreed to a 30-year fixed rate of 2.625 mills (0.2625 cents) for every kilowatt-hr of energy supplied to Valco starting April 25, 1967.⁷⁷ This rate remained a controversial matter for various policy-makers over the decades. The Master Agreement is the document that resulted from the proceedings between VRA and Valco. As part of the agreement, Valco could demand power for an additional 20 years, on the same terms after the initial 30 years had passed, extending contractual agreements until the year 2017. This rate, however, was 40 % lower than that originally advised by the World Bank and other consultants to the Ghana government at the time. Under pressure from the World Bank and from Kaiser to commence the building project, the Ghana government agreed upon the lower rate. To Ghana, Kaiser would provide a long-term demand to generate revenue needed to amortize the dam. It was also reasoned that, since the hydroelectric plant would produce a surplus of electricity, the benefits of building the dam would jumpstart the economy and pay off in the long run. Akosombo began operations in January 1966 and the smelter in April 1967. After

⁷⁵Moxon, *Volta*, 245, 249.

⁷⁶Tsikata, "Dealing with a transnational corporation," 2.

⁷⁷Tsikata, "Dealing with a transnational corporation," 2.

completion of the Volta River Project, Ghana would receive 99 % of its power from hydroelectric power for the next 30 years.

At the ground-breaking ceremony of the Valco Smelter in 1964, Kwame Nkrumah and Edgar Kaiser stood cordially side by side. In previous months, events associated with the Volta River Project operations had triggered mixed emotions from the Ghanaian citizens and the international participants. These had taken the form of anti-American demonstrations in the streets of Accra to months of heavy repairs near the foundation at Akosombo Dam caused by flooding. During the rainy season in 1963 (specifically in July), rains produced floods reaching 15,800 cubic meters per second (557,970 cubic feet per second), a level never recorded in the previous 25 years of records for the Volta River's natural cycles.⁷⁸ Furthermore, the assassination of President Kennedy and an assassination attempt on President Nkrumah less than 6 weeks later both cast a dark shadow on the fate of the Volta River Project. While Nkrumah was still balancing delicate political relations with the West and the Communist nations, the ongoing Volta River Project reassured him of at least one great victory for Ghana. At the ceremony, he quoted the words of the late President Kennedy when he said of "the new states whom we welcome to the land of the free. . . We shall not always expect to find them supporting our view. But we shall always hope to find them strongly supporting their own freedom."⁷⁹

"Taming" the Volta

The catchment area of the Volta basin is about 390,000 km², of which 42 % (which contains the highest water volume) lies within Ghana. The Volta begins as a small stream in the Kong Mountains of Burkina Faso (Upper Volta). After flowing northeast, then due south for some 515 km (320 miles), it enters Ghana as the Black Volta. It then travels along the western border between Ghana and Ivory Coast before turning through a narrow gorge at Bui near the border. The river then meanders northeast until it joins the White Volta (which also finds its source in Burkina Faso). Together, they combine to flow the remaining 483 km (300 miles) to the sea. The Volta River basin is also fed by the Oti and the Afram Rivers (see Exhibit 2: Map of Ghana).

In 1963, construction of Akosombo Dam commenced under the management of Impregilo, an Italian contractor. As the world's fifth largest dam at the time, Akosombo stood 134 m high and approximately 700 m long (440 by 2,250 ft), with a power-rating capacity of 912 MW.⁸⁰ Because of the high surplus of electricity in Ghana at that time, many viewed Akosombo as a permanent solution to electricity provision in Ghana for many years to come. In due course, one of the first programs abandoned by the government, following Nkrumah's overthrow, was the Bui Dam.

⁷⁸Impregilo. 1982. *1956/1981: Twenty-five years of worldwide activity*. Milan, Italy: Impregilo.

⁷⁹Moxon, *Volta*, 270.

⁸⁰Impregilo, *1956/1981*.

Lake Volta, which is the world's largest artificial lake (in terms of surface area), now lies behind Akosombo Dam. The damming of the Volta River resulted in 8,502 km² (3,275 mi²) of flooded riverbanks. In comparison, the combined surface area of two U.S. states, Delaware and Rhode Island, is 8,466 km² (3,270 mi²). About 80,000 people (more than 1 % of Ghana's population at the time) had to be resettled from the area. In addition to the resettlement of the river communities, damming affected local health, agriculture, fishing, and navigation. To this day, treetops can be seen above the waters of Lake Volta at various locations.

Effects on resettled communities

The spreading lake behind Akosombo Dam forced 739 villages along the banks to be moved. However, this was not the first time that Ghana had resettled citizens. In 1956, members of the Frafra people in the Northern Region first had their homes relocated because of overpopulation. They were settled in a less populated and more fertile land at Damongo. Despite the generous provisions, houses, bullocks, and plows, the people had a hard time departing from their traditional lands. For many years, they would send their dead to be buried back home in Frafra, which was over 200 miles away. The second resettlement was the Tema Manhean Project in 1959, which resulted from the construction of the Tema Harbor seaport. Some small fishing villages along the coast were moved about three miles from their original location to a modern village, where each house was replaced on a room-for-room basis.

The Volta Resettlement Scheme, Ghana's third of its kind, carried a budget of \$9.8 million (£3.5 million). Before 80,000 people could be displaced, economic, social, physical, political, and psychological factors had to be addressed. Since resettlement would drastically affect the lifestyles of the people, it was essential to make the transition as smooth as possible, while preserving sacred traditions and rituals of life. Furthermore, there was a prevailing sentiment among the people that the government "owed them something." Many of the people needed to regain a sense of worth and to reestablish their contribution to society. Everyone was given the option of either monetary compensation or resettlement into one of the 52 specially constructed townships. Over 70,000 people chose resettlement over monetary compensation.

Before Akosombo, many of the people along the Volta lived in tiny scattered villages. The average village house was constructed with swish (soil-based) walls and thatch roofs. Subsistence farming, animal grazing, and river fishing were the most common practices in the area, and these traditions were passed down from generation to generation. According to 1956 preparatory studies, only about 6 % of the land to be covered by the lake was "used productively," while the rest was "unsuitable for agriculture or unoccupied."⁸¹ The resettlement scheme offered a unique opportunity to consolidate the scattered villages into more organized communities and provide them with schools, improved sanitary facilities, and increased

⁸¹Hart, *The Volta river project*, 77.

revenue potential through mechanized farming techniques and organized livestock breeding. Furthermore, this consolidation would facilitate future electrification of the area.

A resettlement house was constructed with landcrete walls (landcrete is concrete made with local soil) and an aluminum roof. In terms of the *sturdiness* and *durability* of the building materials used, a resettlement house was superior to the average village house. The layouts of these houses were modeled after the traditional living quarters, which consisted of a central compound surrounded by several rooms. Because of time and cost constraints, VRA constructed the foundations, built the “core” one-bedroom house, and provided building materials (which would spread the cost to the tenant over a 5-year period) and training so that the resettled citizens themselves could finish the additional rooms. They aimed to cut down on labor costs, give the citizens a sense of ownership, and provide them with something to do during the first few months of transition, since many had lost their occupations with creation of the lake.

Although each family was given a “core” house, overcrowding was common because previously every household had built as many rooms as they needed. Also, many of the houses were never completed. In many of the resettlement villages, it was common to see the traditional swish houses constructed alongside the resettlement houses. During the cooler months of the year, many complained that their new houses were too cold. The landcrete walls and aluminum roofs could not insulate as well as the swish and thatch they had been using for hundreds of years.

The resettlement project also aimed to replace the common practice of subsistence farming with “cash-crop” farming. Each farmer would be taught new farming techniques to produce enough for his family and some extra crops to sell for income. In order to support crop rotation, virgin forests were cleared for farmlands, but this was not always done without resistance (the government often clashed with traditional chiefs over who owned the land). As a subsidy, the government also provided chicks, piglets, and other young livestock to the people to rear on the new livestock farms and later to sell for profit. After many of the animals began to die prematurely from disease and malnutrition (usually from improper care), the government stopped giving out the young livestock at no cost to the farmer.

Many agree that the Volta Resettlement project improved the physical environment for the average rural Volta citizen; however, the debate continues as to whether or not there were social and psychological improvements. VRA tried as much as possible to settle people of the same ethnic group into a village. But sometimes there were cultural conflicts because a Fanti would not want to be governed by an Ewe chief, for example. Other problems arose from lifestyle issues. Some who were seasoned fishermen did not want to become cash-crop farmers. Many left their resettlement homes and constructed wooden shacks along the lakeside so that they could be closer to their best-known source of income. As more people encroached on the lakeside and the communities diversified their activities, illegal clearing and farming along the banks led to increased sediment deposit into the lake. With the receding perimeter of the lake due to the drought in 1998, the government made efforts to replant trees along the lakeside to control erosion.

Effects on Health

The dam virtually halted the rate of water flow in the Volta River, increasing stagnant water conditions and consequently creating ideal breeding grounds for carriers of waterborne diseases. Before the Akosombo and Kpong Dams, malaria (from mosquitoes) was not much of a problem along the swift-flowing Volta River, but after it became a stagnant lake, malaria became a greater public health concern in lakeside villages. Likewise, only 1–5 % of the population had suffered from schistosomiasis (a disease transmitted by snails) before the dam was constructed. By 1979, urinary schistosomiasis had grown to become the most prevalent disease in the area, affecting some 75 % of lakeside residents.⁸²

Humans are infected by urinary schistosomiasis through water that contains the larvae (cercariae) of the parasitic worm. When ingested, the larvae travel into the blood stream, where they may become lodged in the liver, lungs, or heart. Inside the human host, the cercariae mature into the parasitic worm. The worms may also travel through the blood stream, where they can sometimes clog arteries and veins, leading to cardiac failure. The worms lay eggs that leave the body through the urine. The eggs hatch on contact with water, releasing miracidia. The miracidia quickly find new hosts in certain species of stagnant water snails, whose numbers have increased in the lake environment. Inside the snails, the miracidia mature into cercariae, which return back to the water, completing the cycle. Symptoms include skin complaints, fever, inflammation, and coughing. In more advanced stages, one may notice blood in the urine. Schistosomiasis leads to death through cardiac failure, fibrosis of the lungs, an enlarged spleen, or secondary bacterial infection of the urinary tract.

During the construction of Kpong Dam in the early 1980s, flooding provided some health benefits. The dam was sited a few kilometers downstream from Kpong town, so that the backwaters would flood the Kpong Rapids, which was the largest breeding ground for the tsetse fly in Ghana. Sleeping sickness, carried by the tsetse fly, was a major problem for the British colonists, foreigners, and other people who did not have acquired biological defenses. Tsetse flies breed in the dense bush bordering bodies of water, and are most prevalent in the lower part of the Brong Ahafo Region, the Ashanti Region, and parts of the Eastern Region into the Volta Region. Sleeping sickness may linger quietly in a person for many years, causing a loss of energy and reduced immunity to other diseases. Full-blown sleeping sickness leads to quick death.

Effects on Agriculture

Long before Akosombo was constructed, the fertile banks along the Volta River were some of Ghana's richest agricultural land. Archeological finds show that the

⁸²Gitlitz, "The Relationship."

Volta Basin was once well populated.⁸³ Much of the natural vegetation was burned down for agriculture over a period of more than a 1,000 years, which led to the eventual drying and erosion of the land. However, the floodplains along the raging Volta River provided a constant source of fertile agricultural land for local farmers.

Before Akosombo Dam, local farming along the Volta was structured around the rise and fall of the river. The damming put an end to the natural cycles that had deposited nutrient-laden silts along the flood plains. The river ecosystem was transformed into a lake ecosystem. Damming led to a drastic curtailment in subsistence agricultural production and animal grazing. Farming communities downstream continually petitioned VRA to coordinate its spillage with the traditional flooding cycles to simulate the natural flood cycles necessary for agricultural stability. Unfortunately, demands for electricity could not always be synchronized with the traditional flooding seasons. Furthermore, the reduced flow into the Gulf of Guinea resulted in salt-water intrusion at the Volta River delta and estuary. Salt water destroyed clam beds and lowered drinking water quality. Many of the stream and clam fishermen downstream moved north to the lake, where they hoped to restore their careers.

The Volta River Project also included plans for an irrigation network in the Afram Plains, which was considered Ghana's agricultural breadbasket. However, these plans were pushed down the agenda for various economic, social, and political reasons. The sudden change in government in 1966 led to budget restructuring during the first year of Akosombo's operation, which affected many of the original project initiatives, including the irrigation network and the resettlement scheme. Teaching new farming techniques was expensive, and there was no guarantee that the traditional farmers would embrace them. In 1998, only 2,000 ha of irrigated land existed in Ghana.

Effects on fishing industry

Although it was created primarily as a hydroelectric reservoir, Akosombo created a lake environment suitable for fish breeding. Lake Volta soon grew to become a highly productive fishing area yielding around 40,000 t annually.

Before dam construction began, St. John Bird wanted to remove the trees in the floodplains of the Volta River so that broken limbs would not damage the turbines. Only a few trees in the river section closest to the turbine intakes were removed. Those upstream were never removed. Further tree removal would have been good for fishermen. Submerged growth in the lake entangled and destroyed fishing nets. Mobile nets (winch nets) typically catch more fish than stationary nets. Not only would tree removal safeguard the turbines, but also local fishermen could use winch nets to increase their fish catch and consequently increase their earning potential.

Stationary fishing methods such as gill nets, traps, long lines, cast nets, and spears would remain the most widely used methods. Although fish were more

⁸³Kaplan, Irving et al. 1971. *Area handbook for Ghana*. Washington, D.C.: Library of Congress, p. 17.

available, fishing was difficult for some fishermen because (1) finding an open area without too much submerged growth was difficult, (2) open areas, only accessible by boat, were typically located along the main channel, (3) open areas were often overfished by winch fishermen, (4) fishing nets entangled in submerged trees required substantial time and energy to free, and (5) mending or replacing damaged nets was expensive in both time and money. Many fishermen in lakeside communities also engaged in complementary economic activities like farming and livestock-rearing.⁸⁴

Life in lakeside communities is characterized by hardship. In 1998, policy makers of the Atebubu district in the Brong Ahafo Region were hesitant to build schools for the children of fishing communities located along the lake. Many of the fishermen and their families migrated with the fish, and those who were stationary chose not to send their children to school because they served as valuable labor hands. Many of these villages were also located within restricted lakeside areas reserved for farming. Most parents could not afford to send their children to better schools outside of the region; instead, their children were sent to earn money as menial labor hands for local fishermen. The wealthier fishermen, who would send their own children to better schools in the cities, overworked their neighbors' children. These children were usually between 8 and 11 years old. They could be found placing and retrieving bamboo traps and fishnets in the lake.⁸⁵ Not only were they subjected to deplorable working conditions, but these children were also deprived of education during critical years of social and mental development.

The growth of the fishing industry led to the migration of various people groups to the lakeside settlements. Survey data indicate that 80 % of the fishing villages near Yeji were inhabited by more than one tribe, and 50 % included two or three tribes.⁸⁶ Cultural differences were expressed in their intertribal relationships. Ewe fishermen, who principally used stationary nets clashed with Adangbe and Adas over their use of winch nets. Ewes and Adangbes, with established homes and livelihoods in the area, complained of Fantis and Adas, who came during prime fishing seasons to make money, and then returned home. Territorial clashes arose over who had the right to fish where.

Over time, the use of larger fishing boats and winch fishing nets in some parts of the lake proved quite profitable for those fishermen, some of whom had migrated from the coastal areas to Lake Volta. In 1998, the threat of overfishing in the lake became an issue of national concern, and the use of certain nets was prohibited. By request of the Ghana Fisheries Department, the Navy began monitoring fishing operations at Yeji. Fishery regulations restricted fishing to net with mesh sizes of less than two inches, as a means of preventing overfishing in the lake. To enforce these regulations, authorities confiscated the nets of fishermen suspected of using unauthorized nets.

⁸⁴ Agyenim-Boateng, conversations and interview; see Acknowledgements.

⁸⁵ "Rich Fishermen Exploiting Children," Ghana Focus, in *Africa News Online*, <http://www.africanews.org/west/ghana/stories>

⁸⁶ Agyenim-Boateng, conversations.

Effects on Aquatic Navigation

Between the time of Kitson's original vision (1915) and the actual construction of Akosombo Dam (1963), several proposals were drafted concerning the size and capacity of the dam. Each time, the conceptual size increased to generate more power capacity and a larger lake that would theoretically make navigation to the bauxite deposits easier (although Valco opted not to develop Ghana's bauxite resources). Before the dam, east-west routes were the most common mode of river navigation. Villagers could easily row across the river to trade goods and communicate with other villages. Most villages spoke the same language and exhibited similar lifestyles since they were separated by a relatively narrow Volta River that was hardly suitable for large-scale, north-south navigation.

With the construction of the dam, the immense lake consumed riparian land and increased east-west rowing distances an average of 24 km (15 miles). After dam construction, a shipyard was constructed at Akosombo, and ferries began navigation along Lake Volta between Akosombo and Yeji. The lake provided a 400-km (250-mile), north-south navigational corridor for an inland shipping route. Together, the Volta, Ankobra, and Tano Rivers provided 168 km of perennial navigation for launches and lighters; Lake Volta provided 1,125 km of arterial and feeder waterways.⁸⁷

When Power Fades

During the 1970s, when oil prices reached record high prices worldwide, energy prices in Ghana increased by 900 % from their 1962 levels, making the Valco contractual agreements far less representative of the current state of affairs.⁸⁸ In 1972, 1973, and 1977, Valco agreed to some adjustments to the rate, but VRA and its lenders regarded the changes as unsatisfactory. By 1982, the power rate had been increased from the original 2.265 mills per kW/h to 5 mills per kW/h, an increase of 100 % over a time period during which energy prices had generally increased by 900 %.⁸⁹

In 1982, Ghana called Valco into negotiations. The first question that arose was whether Ghana had the legal right to call for renegotiations of previously agreed contractual terms. If Valco was not willing to renegotiate, Ghana could take unilateral action under certain codes of international law. This right of a host country to pass sanctions against or regulate the activities of a foreign investor who

⁸⁷U.S. Central Intelligence Agency, *The World Factbook*, 1, n.p. (September 7, 1995).

⁸⁸Tsikata, "Dealing with a Transnational Corporation," 2.

⁸⁹Sawyer, Akilappa. Some legal issues arising from the Valco agreement. In *Essays*, ed. Fui S. Tsikata, 60–86.

was viewed as exploiting natural resources within its jurisdiction was a controversial matter in international law.

Various resolutions of the United Nations General Assembly *Charter on the Economic Rights and Duties of States* state that a host country is free to “exercise full permanent sovereignty including possession, use, and disposal over all its wealth, natural resources, and economic activities.” At the same time, Article 12 of the *Harvard Draft Convention on International Responsibility of States for Injuries to Aliens* also says that “the violation through arbitrary action of the state of a contract or concession to which the central government of that state and alien are parties is wrongful.” Furthermore, under the Hickenlooper amendment to protect U.S. investors in foreign countries, the U.S. government is obligated to cut off all aid to any country that nationalizes the property or activities of any U.S. investor “without adequate compensation.” Many considered it a bold move for Ghana to call Valco into renegotiations, but at the same time, Ghana’s reasons were being heard internationally, and Valco needed to respond.

Between 1982 and 1985, Ghana and Valco engaged in renegotiations. Ghana’s primary concern about the invalidity of the previous terms was that power production was calculated by *average* power. Valco was entitled to a percentage of VRA’s average generating potential. In a country where there is a diversified, relatively stable power infrastructure, average power is an appropriate measure of available power. Ghana argued that due to the variable nature of hydroelectric power, the terms should have been assessed on a *firm* power basis, that is, by the actual generating potential at a given time. If the system faced a drought, with power generation being far less than average, Ghana argued that they would be unfairly obligated to provide power that would not be attainable for the system. Not only did the renegotiations result in rewriting the contracts in terms of firm power, but also Ghana’s relations with the United States were preserved.

Under the Master Agreement, Valco was allowed to mine bauxite from about 40 mile² of land within Ghana without paying duties on mining or processing. However, the Agreement (under Article 20) also allowed Valco to import “all raw materials” from other countries duty-free as long as such materials were not locally available in quality, quantity, or at competitive prices. Since aluminum was Valco’s primary resource, an exception was permitted to exclude it from Article 20. Valco was free to import aluminum *duty-free* from wherever it pleased, even if comparable aluminum was available in Ghana. Consequently, Ghana lost the import duty on aluminum as a levying weapon against increases in electricity production costs. As of 1998, VALCO imported 100 % of its alumina from Jamaica, which was processed in Ghana at a low electricity price rate. Only 10 % of the finished product remained in the country and 90 % was exported to Europe.⁹⁰

In 1977 and 1978, rebellious struggles against the Ghana government resulted in “wildcat strike action.” As a result of sabotage, power to Valco was interrupted without notice. Valco demanded compensation of \$55 million from the government

⁹⁰*The Independent* (Accra, Ghana), 11 June 1998.

for repair costs and lost profits, sighting the Master Agreement (Article 7(D)). The clause stated that the government must “make good to Valco all losses, damages, costs, and expenses incurred by Valco by reason of any default on the part of VRA in the fulfillment of its obligations.”⁹¹ It was determined that the government was not directly liable for the interruptions since the forces were beyond the control of VRA. To avoid litigation, the Ghana government paid Valco \$10 million.

The “wildcat strike action” against the government may have been attributed to unrest between the military regime and labor unions. From the time of Nkrumah’s overthrow well into the 1980s, the government’s political climate was characterized by coups and passive military rule. Each successive government assumed power with both its supporters and rivals close at hand. Meanwhile, many believe that the rights of the people were often overlooked in the crossfire. At the time of the strike, labor unions made up of doctors, lawyers, and other professionals were in vocal disagreement with the government over unfair treatment and inadequate salary compensation. Some believe that the reason the government paid Valco \$10 million was also to draw eyes away from the civil unrest within the country and put the government in favorable standing with investors.

In 1983, when a severe drought significantly reduced the water level in the dam, VRA began to question the sustainability of hydroelectric power as a sufficient source of electricity for Ghana’s future. By August of 1994, the cumulative inflow into Lake Volta reached a 50-year record low, resulting in a water level of 73 m (239.5 ft), well below VRA’s 75.5 m (248 ft) minimum level of generating power without risk of damaging the turbines. Some critics blamed the power shortages on VRA’s poor management of the reservoir and accused them of “guesswork rather than science” in predicting water levels and spillage quantities.⁹² The annual flooding cycles are between the months of July and November. The final level after this time often determines the power generating capacity for the following year. In 1992, the water level reached its highest level of 84 m (275 ft) since the 1982 drought. In June of 1997, VRA predicted satisfactory rainfall. But by the beginning of November 1997, the lake level still lingered around a meager 74 m (242 ft). After some rains in the northern region, the end of the flooding cycle saw water levels reach only 78 m (256 ft). As shown in Fig. 2.2, Akosombo Dam operated at or below 50 % capacity throughout the first half of 1998.

Ghana Power Crisis: 1997–1998

Meteorologists attributed the Volta River droughts and the subsequent 1997–1998 Ghana power crisis to El Nino, the worldwide weather phenomenon responsible for climate fluctuations, storms, natural disasters, floods, and droughts

⁹¹Tsikata, “Dealing with a Transnational Corporation,” 3.

⁹²Gitlitz, “The Relationship.”



Fig. 2.2 Reduced water level at Akosombo (July 1998)

around the globe.⁹³ Although past droughts have affected power production, the 1997–1998 drought is arguably the worst in Ghana history because of its long duration.

March 23, 1998, marked the eve of the first visit to Ghana by a U.S. President. Bill Clinton arrived to witness the institution of the largest electricity rationing schedule in Ghana history. Under the new plan, electricity would be supplied for 12 out of every 24 h. Households would be cut to 50 % of normal power while businesses and industries received between 50 % and 70 %.⁹⁴

Effects on the Household

Because of the power crisis, households were forced to look for alternative sources of light energy, like candles, lanterns, and rechargeable and battery-powered flashlights. A market survey conducted by the Ghana News Agency on the prices of some of these commodities in Accra, Ghana's capital, showed that increased demand for them led to price hikes and shortages. Some of the more affluent Ghanaians purchased private generators for their homes. Demand for

⁹³Aggrey, Emily. 1998. El Niño causes high energy prices (May 25, 1998), *Panafrican News Agency*, *Africa News Online*, http://www.africanews.org/west/ghana/stories19980525_feat2.html

⁹⁴LCG Consulting. 1998. Ghana power crisis spreads along Gold Coast" (March 23, 1998), *EnergyOnline*, http://www.energyonline.com/Restructuring/news_reports/news/c23afr.html

generators increased, but market competition kept the prices stable. Generators with capacities ranging between 1.4 and 3.0 KVA ranged in price between \$2,300 and \$7,000.⁹⁵

Ghanaian cost of living increased as a result of the power shortage. The shortages affected demand for imported household electrical appliances like televisions, stereos, refrigerators, and blenders. Similarly, the prices of Ghanaian manufactured goods and household food items increased. Even the price of ice doubled, increasing soda and beer prices at local drink bars. Many factories were forced to reduce their labor force to avoid economic losses.

Effects on Industry and Exports

As part of the electricity rationing schedule, industries were supplied with slightly more electricity than households. They received electricity up to 70 % of the time.⁹⁶ According to Mr. Emmanuel K.K. Hayford, of Ghana Customs, Excise and Preventive Services (CEPS), who had been watching the effects of the power crisis on industry, these provisions seemed to be working well for them. A more difficult endeavor was to estimate the real impact of the power curtailment on export and on the economy as a whole. Because of the special arrangements, most of the industries worked round the clock to make up for lost time. Many companies also purchased heavy-duty generators to supplement the electricity supplied by VRA.

Mr. Hayford commented that because of improper city planning, some of the industries established themselves within residential zones and vice-versa. Those industries situated in residential zones were relatively small in size and their levels of production were relatively low compared to those located within industrial zones. Their small size, combined with their unfortunate location within residential zones, which received electricity for only 12 h of the day, greatly reduced their productivity.

Since much of the power curtailment had negative effects only on smaller industries situated in residential zones, and since larger industries had intensified their work schedules to suit their power supply arrangements, one was “tempted to assume that this problem has not affected exports much,” commented Mr. Hayford. The effect of power curtailment on export quantities was negligible. However, its effects were reflected in increased production cost, since many industries purchased diesel generators to supplement the power supply. This may have raised the price of exports from Ghana (in the case of industrially manufactured goods).

⁹⁵Aggrey, “El Niño.”

⁹⁶LCG Consulting, “Ghana Power.”

What Lies Ahead for Ghana?

Thermal Energy

The Ghana Generation Planning Study of 1985 identified combustion turbines as the most attractive power supplement to the existing hydroelectric system. A thermal combustion plant could be powered by light crude oil (LCO) or natural gas. Given the high availability and relatively cheaper cost of fuel, a thermal combustion plant could prove to be both economical and a constant source of power, since droughts could not affect generating capacity. A site was identified near Takoradi for the construction of a thermal generating plant at an estimated cost of \$400 million.

In 1992, Acres International Ltd. of Canada recommended the construction of a 400 MW generating facility by 1997. The proposed plant was composed of a 300 MW combined-cycle plant and a 100 MW simple-cycle combustion turbine with associated transmission line expansion to tie it into the existing national grid. Following further analysis and June/July 1993 negotiations with the World Bank, the major funding agency, the project was re-dimensioned to 300 MW. The new proposed plant was composed of two 100 MW combustion turbines, each with a 50 MW heat recovery steam generator.

A detailed environmental assessment was performed to ensure that the project met the environmental requirements of the funding agencies. A detailed pre- and post-construction program covered the terrestrial ecology of the site and transmission corridor, ambient site air quality, noise “pollution” levels, and biological characteristics of the local marine environment. For example, the cooling water used by the turbines had to be within 2°C of the receiving water temperature before it could be returned to the ocean.

Accelerated by the power crisis and the need for electricity, the first 100 MW combustion turbine was completed and synchronized into the national grid in November of 1997, and the second 100 MW turbine on January 8, 1998. The turbines were online before the rest of the facility was constructed. On March 16, an explosion in the lower chamber of the turbine chimney took one of the 100 MW units out of service. It was quickly repaired and running in order to lessen the effects on the public. Much suspicion surrounded this explosion. Some blamed the accelerated nature of the construction and others blamed the U.S. contractor of using second-grade General Electric components to build the turbines, but VRA attests that new parts were used by their contractor to construct the turbines.

Thermal power supplemented the energy grid in Ghana, and many believed that it would remain a viable option for future expansion and development. Although the plant was constructed with a 300 MW capacity, the design was adaptable for future expansion to 600 or 900 MW. In February of 1998, CMS Energy Corporation (NYSE: CMS) of Dearborn, Michigan announced it had reached an agreement with the Government of Ghana VRA for the acquisition and expansion of the Takoradi Thermal Power Plant (TTPP) and development of further energy infrastructure projects in Ghana. It would become a 50 % partner in ownership and operation of the plant and also assist to double

the capacity of the plant in an accelerated timetable. In 1997 and 1998, the thermal plant burned LCO, but the turbine design allowed for a clean switch to cheaper and cleaner-burning natural gas if and when it became more readily available.

Importing electricity

At June 1998 meetings of West African energy experts in Abidjan, the commercial capital of Ivory Coast, several alternatives were examined to deal with the power crisis which had then spread to Ghana's eastern neighbors, Benin and Togo.

Earlier in March of 1998, Benin Prime Minister Adrien Houngbedji and his Togo counterpart, Kwassi Klutse, met in Abidjan with officials from Compagnie Ivoirienne d'Electricite (CIE), Ivory Coast's national utility, asking for energy to replace cutbacks from Ghanaian power exports to their countries. Ivory Coast had imported electricity from Ghana for many years until natural gas reserves were discovered off their sea coast. The natural gas reserves, combined with modern, more efficient power plants, transformed Ivory Coast from an importer into an exporter of electricity. As power became more available, the distribution grid within the Ivory Coast developed, and the power demand increased, limiting its export potential. Ivorian sources warned that satisfying the power demands in Benin and Togo could result in shortages in Ivory Coast.

In order to ensure against future West African crises, Ghana had to cooperate with its West African neighbors to establish a secure power network. At the 1998 gold award symposium for the Economic Community of West African States (ECOWAS) in Lagos, Nigeria, Executive Secretary Lansana Kouyate announced plans to begin construction on the \$260 million West African Gas Pipeline by the end of calendar year 1998.

For many years, the vast natural gas reserves trapped in the air above Nigeria's oil reserves were flared away to waste. During the 1998 power crisis, they were viewed as a viable solution and a potential safety buffer against future power shortages. The gas pipeline project followed a World Bank study showing that Nigeria's surplus gas could meet the energy needs of the West African sub-region if well harnessed. According to Kouyate, the goal of the West African Pipeline was to ensure that energy generation in the sub-region would be from gas by the year 2000.⁹⁷

According to the plans, the underwater pipeline would extend from Nigeria along the West African coastline to supply natural gas to Ghana, Benin, and Togo. The gas pipeline project was expected to pipe 50 million cubic feet per day of Nigeria's natural gas to the three countries over 20 years, starting from 1999. According to project plans, the volume of gas piped to the countries would rise to 160 million cubic feet per day by the year 2018.⁹⁸ The West African pipeline could eventually supply natural gas to the thermal plant at Takoradi, reducing energy costs (from burning LCO) by more than 50 %.

⁹⁷Ikeh, Goddy. West African gas pipeline takes Off 1998. *Panafrican News Agency*, 2 June 1998, http://www.africanews.org/west/stories/19980602_feat3.html

⁹⁸Goddy Ikeh.

Hydroelectric power

Other sites for potential hydroelectric plants have been suggested along the Pra, Tao, White Volta, and Ankroba rivers. However, a dam (with an estimated capacity of 400 MW) at Bui, along the Black Volta River in the Brong Ahafo region, is under serious consideration. Future hydroelectric power would require substantial investment but at the same time provide a relatively clean source of power.

In a press release early in 1998, Ghana Minister of Mines and Energy, Fred Oshene-Kena noted that, depending on the feasibility and designs, Bui might generate between 100 and 200 or 400 MW.⁹⁹ If a 400 MW-producing dam were constructed, the backwaters would inundate parts of the Bui National Park. In 1998, Bui National Park was a protected area of guinea savannah extending about 1,800 sq. km. International environmentalists noted the Bole Game Reserve and nearby Bui National park as one of the last remaining, highly diverse West African rainforests.

The Volta River Authority performed extensive site studies of the area encompassed within the Bui National Park, which showed that the boundaries of the park were poorly defined and not well secured. Poachers, illegal farmers, and fishermen entered the land at will to take advantage of the available resources. About 383 km² of land (20 % of the National Park) would be flooded if the Bui Dam were constructed. As compensation, VRA proposed to secure the Game Reserve by establishing protected boundaries and hiring rangers to monitor the up keep and preservation of the entire area. With the construction of the Bui Dam would also come the establishment of a defined and protected National Park, with secured buffer zones surrounding the boundaries. The objective of these buffer zones was to better involve the local population in the protection of the park by developing activities (such as tourism, controlled hunting, and fishing) which would generate profit for the people in harmony with the protection of the park.

For the long-term plan of the Bui hydro project, the Swedish-American Company, SKANSA, expressed interest to build on a turnkey basis. SKANSA, which had many interests in southern and eastern Africa, had also shown interest in toll road construction in Ghana, and even had plans to start feasibility studies on the projects. In 1998 SKANSA was actively building pipelines for water from Kpong to Accra and they also expressed interest in the Kotoka International Airport improvement project and the Ambassador Hotel rehabilitation program in Accra. It established a Ghana office, which was also responsible for projects in Burkina Faso, Cote d'Ivoire and Nigeria.¹⁰⁰

Some Other Options

In late 1994, a research nuclear reactor was nearing completion at Kwabenyan, near Accra. At that time, the Ghana Atomic Energy Commission (GAEC) also recommended the construction of another nuclear physics center in Kumasi at the University of Science

⁹⁹Joy 99.7 FM, No more power outages for industries by July. *This Week's Stories* (May 23, 1998), <http://www.joy997fm.com.gh/news2.htm>.

¹⁰⁰Joy 99.7 FM, No more power outages for industries by July. *This Week's Stories* (May 23, 1998), <http://www.joy997fm.com.gh/news2.htm#>

and Technology. They believed that, if properly researched and implemented, nuclear energy could provide a lasting source of emission-free power to meet all of Ghana's energy needs. But critics argued that Ghana did not have the proper infrastructure to deal with the possibility of a nuclear disaster resulting from an accident at a nuclear generating station. By 1998 VRA had not actively entertained the possibility of adding nuclear power to its power options. The push for nuclear power also suffered growing sentiment against the construction of new plants.

Solar energy was being used on an experimental basis. It was viewed as a possible way of electrifying rural regions outside of the power grid. Due to high capital costs, solar power had not surfaced as a viable option for wide-scale integration in Ghana.

Small, localized, and relatively cheap fossil-fuel plants were constructed at some locations in Ghana to supplement power demand. For example, VRA had a 30 MW capacity diesel plant at Tema, which operated during the peak hours of 1,700 GMT to 2,200 GMT.¹⁰¹ Although these plants provided a temporary solution to localized problems, the challenges of ensuring future national power viability overshadowed prospects of further localized plants.

In the heat of the 1998 power crisis, Ghana faced important decisions to safeguard its future economic viability. In 1994, 1997, and 1998, water levels were not sufficient to power hydroelectric generators to meet Ghana's growing energy demands. This led to a nationwide electricity-rationing schedule, reduction in exported electricity to Togo and Benin, and extensive negotiations and monetary compensation to Valco.

Decision makers (a few of whom included the Ghana Department of Mines and Energy, VRA, and the Ghana Electricity Supply Company), needed to make practical, affordable, and sustainable choices for electricity in Ghana. The options included: (1) thermal energy, (2) importing electricity, (3) construction of additional hydroelectric dam(s), and (4) other options like nuclear energy, solar energy, and other fossil-fuel-powered plants and generators. If you were a consultant to the Ghana Department of Mines and Energy, what would you recommend?

President Clinton's 1998 visit to Ghana brought new spirit to United States and other multinational interests in Ghana. Many Ghanaians regarded the flood of companies coming to Ghana for power generation, among other reasons, as a benefit to Ghana. How will the lessons from Ghana's history and past experiences affect Ghana's dealings with these multinational interests? What steps must be taken to ensure that future agreements and projects are economically and environmentally sustainable?

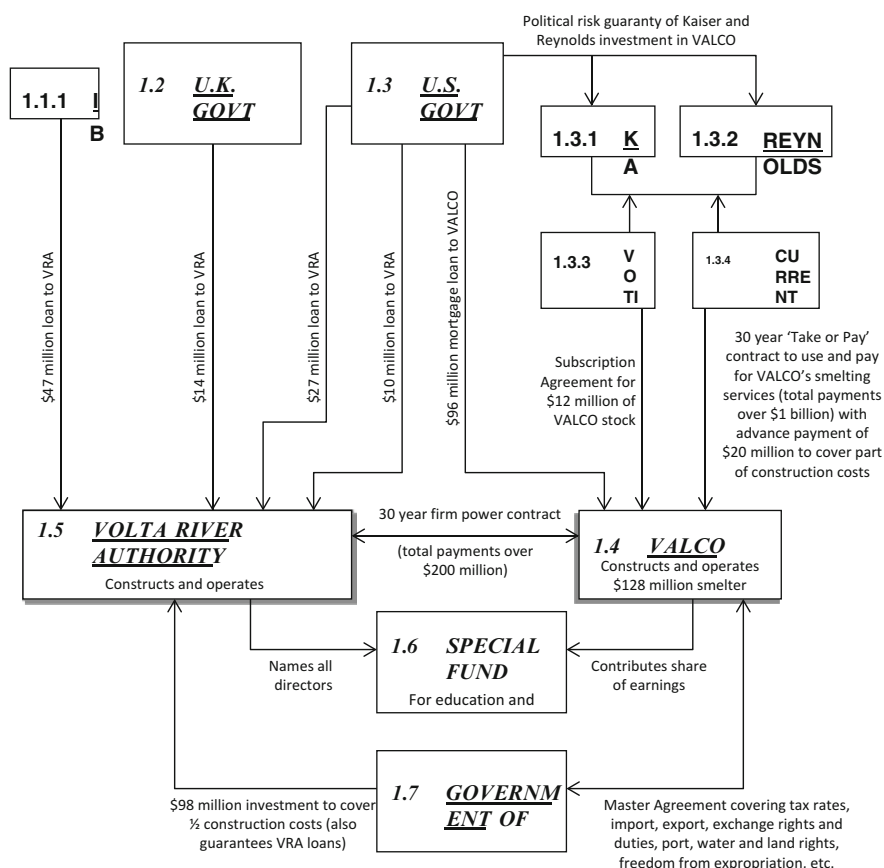
Acknowledgments

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¹⁰¹ Panafrican News Agency. Ghanaians told to conserve power. *Africa News Online*, 23 August 1997, http://www.africanews.org/west/ghana/stories/19970823_feat1.html

Theophilus Sackey, civil engineers VRA Akuse; Owura K. Sarfo, manager VRA Engineering Department in Akuse; Erik N. Yankah, VRA executive director of Personnel, member 1982–1985 VRA-Valco Negotiations Team; Ricky Evans-Appiah and J. Amissah-Arthur, administrator and director, respectively, VRA Engineering and Design Department Akuse; K.K. Hayford, Ghana Customs Excise and Preventive Services; Esther Riverson, Ph. D, Ghana Resettlement project specialist; John Riverson, World Bank; Albert Wright, World Bank, and former professor, University of Ghana.

Exhibit 1: Principal Agreements

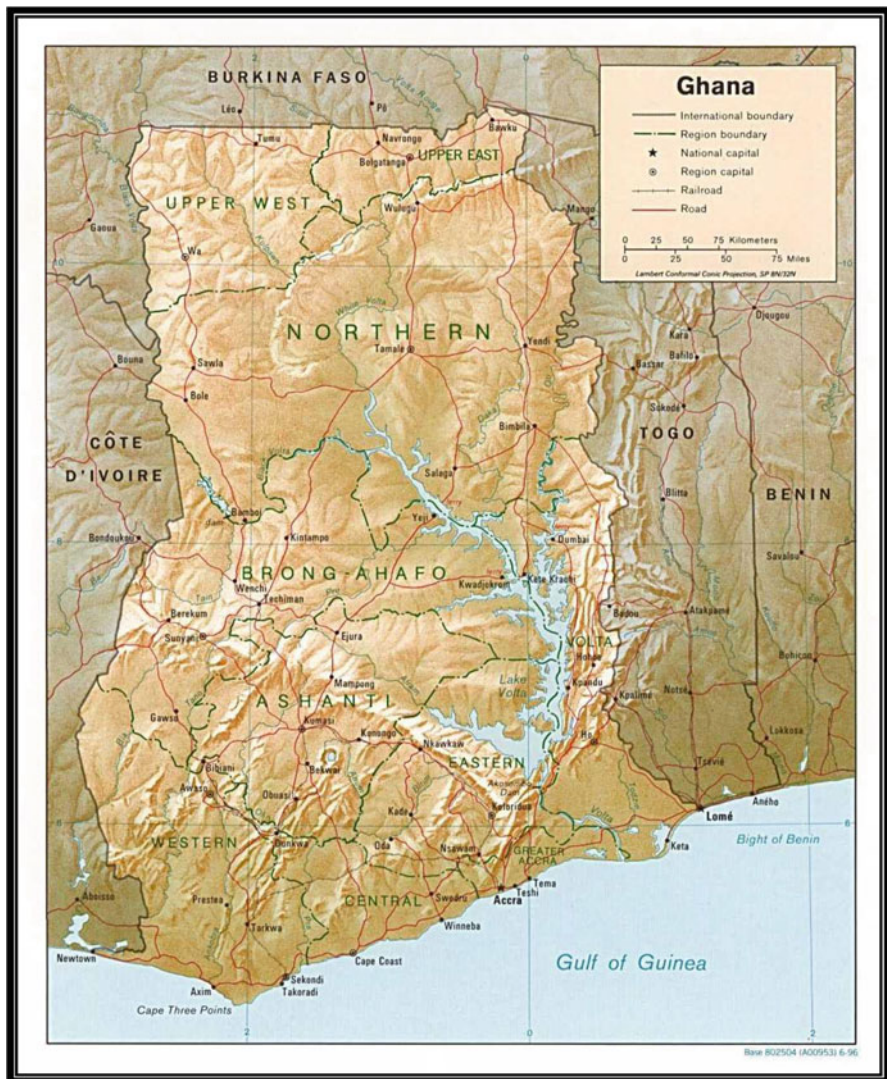


Schematic diagram of financing participants and principal agreements for the Volta River Project, executed on February 8, 1962 (Hart, 31)

¹Morgan Guaranty Trust Co., Voting Trustee. If VALCO fails to build smelter, voting trustee replaces management until construction completed.

²First National City Bank of New York, Trustee. Handles all payments by Kaiser and Reynolds to VALCO, payment of VALCO expenses and taxes, and retains balance in New York.

Exhibit 2: Map of Ghana



Produced by U.S. Central Intelligence Agency (1996)

Source: The Perry-Castañeda Library Map Collection. University of Texas at Austin, http://www.lib.utexas.edu/Libs/PCL/Map_collection/ghana.html

Exhibit 3: Some Key Terms and Names

Alumina	A powder of refined bauxite that is smelted at high temperatures to form aluminum products.
Bauxite	A mineral ore containing aluminum oxide or hydroxides with several impurities.
Bui	A town in western Ghana. Potential site for a hydroelectric dam.
Burkina Faso	Ghana's northern neighbor. Previously called Upper Volta.
Gold Coast	Name given by first Portuguese explorers to the territory that is now Ghana. Became the Republic of Ghana after independence from Great Britain in 1957.
Impregilo	Italian contractor who constructed Akosombo and Kpong Dams.
Kaiser Edgar	American owner and founder of Kaiser Aluminum Corporation.
Kitson Albert (<i>later</i> Sir)	Director of the Gold Coast Geological Survey, discovered bauxite deposits near Mpraeso in 1914, and first proposed a dam at Akosombo.
Kpong Dam	A smaller hydroelectric plant downstream from Akosombo Dam, on the Volta River.
Master Agreement	The document outlining the negotiations and the terms governing the relationship between VALCO and VRA.
Nkrumah Kwame	African rights activist and Ghana's first elected president.
Rose Duncan	English engineer who had a keen interest in aluminum production.
St. John Bird Christopher	South African Engineer who worked with Duncan Rose to spur international interest for aluminum production in Ghana.
Takoradi Thermal Power Plant	VRA light crude oil/natural gas power plant constructed to supplement hydroelectric power from Akosombo and Kpong.
Volta Aluminum Corporation (VALCO)	A consortium of American aluminum companies including Kaiser (78 %) Reynolds (10 %).
Volta River Authority (VRA)	Ghana's statutory power provider.
Volta River Project	The name given to the association of the Volta River Authority (VRA) and the Volta Aluminum Corporation (VALCO).

Volta River Project Addendum – 2013

In the 14 years since this case's publication, the state of electricity in Ghana has made considerable progress on several fronts. Between 1999 and 2006, the Akosombo dam's turbines and generators were retrofitted with state-of-the-art technology, increasing the generation capacity from 912 MW to 1,020 MW. A third dam, on the Black Volta River at Bui, will add 400 MW of installed generation capacity and will complete construction in 2013.

The Volta River Authority and TAQA have recently completed funding to expand the 200 MW Takoradi 2 Thermal Power Plant, which will increase the installed capacity by 110 MW and convert it to a combined cycle unit. The Takoradi 3 Combined Cycle Thermal Power Project is currently under construction, and will provide a further 132 MW.

Though the Volta River Authority is exploring several solar and wind power options, perhaps the country's most exciting development is the 155 MW solar power plant, the continent's largest, due to begin construction near Aiwiaso in late 2013. Developed by Blue Energy, a UK renewable energy company, the photovoltaic plant will help the country's aim of increasing its renewable energy capacity to 10 % by 2020.

The government of Ghana had previously promised universal access to electricity for its citizens by 2020, but recently shortened the timetable to 2016, with the government bearing all costs of connection.

<http://www.vra.com/>

<http://www.guardian.co.uk/environment/2012/dec/04/africa-largest-solar-power-plant-ghana>

<http://www.ghana.gov.gh/index.php/news/features/18845-ghana-to-attain-full-national-electricity-coverage-by-2016>

<http://www.ghana.gov.gh/index.php/news/general-news/19402-taqa-completes-financing-for-takoradi-2-expansion>

Transforming Education in Rural Haiti: Intel and L'Ecole De Choix¹⁰²

In the fall of 2011, John Cartwright was looking at a muddy construction site in Mirebalais, Haiti. Less than 2 years after a 7.0-magnitude earthquake devastated the country, Cartwright had traveled to this rural region of Haiti as part of a volunteer team of Intel Corporation (Intel) employees to support the installation of

¹⁰²This case was prepared by Pauline J. Albert, Laura P. Hartman, Crina Archer and Jenny Mead under the supervision of Patricia H. Werhane. Copyright©2012 University of Virginia Darden School Foundation. All rights reserved. One of the authors, Pauline J. Albert, worked for Intel between 1990 and 2002, and held a variety of communications and marketing positions in the U.S.

education hardware and software during the launch of a nonprofit school, *l'Ecole de Choix*¹⁰³ (Choix). Choix's vision was to transform the educational opportunities available to rural Haitian children. Computer literacy and computer-based educational tools were a significant element of Choix's objective to provide a quality education for its students, making the school a promising partner for Intel's Education Service Corps (IESC). If the mission of the IESC were strictly charitable, Cartwright's task would be daunting enough. But the infrastructure around him was still in postearthquake shambles. How would his team install computing platforms and train faculty and students without a completed building, let alone working electricity?

The challenges that Cartwright faced when Intel partnered with nonprofit organizations such as Choix were also informed by Intel's broader vision for the IESC program, which involved both business strategy and its corporate social mission. Julie Clugage, founder of the IESC, described these objectives in terms of a "triple win."¹⁰⁴ For projects to be successful, they had to result in a business "win": their execution had to be cost-effective, requiring limited financial investment by Intel, and their success should advance Intel's business strategy of raising the company's visibility and reputation in emerging market areas. The projects also aimed to produce a human resources "win" for Intel, as volunteer employees brought their enthusiasm and any new insights they had gained in the field back to the company after their IESC deployments. Finally, successful projects provided a "win" to nonprofit partner organizations and to the communities they served by providing high-quality learning technology tailored to local needs and sustainable over the long term.

The triple-win approach that Intel promoted with its IESC projects was an extremely promising idea, as the objectives were mutually reinforcing. But how was Cartwright to successfully implement this vision in Mirebalais, so that his efforts provided not only a sustainable benefit to the Choix students living in conditions of extreme poverty but also a return to Intel on the investment of its resources? Could Intel's integration of business and social strategy succeed in the context of postquake rural Haiti, where challenges ranged from exceptionally long construction delays and a lack of electricity to more entrenched obstacles such as the legacy of weak governmental support for education; crumbling infrastructure; and deep class, racial, and geographical inequalities?

At the beginning of this first visit to Choix, Cartwright wondered whether, at the conclusion of the trip, he would be able to report any success. This particular morning, he had to face the fact that he and his team might soon have to engage in a bit of construction work themselves if they were going to see any progress at all that week.

and Europe. During the early 1990s, she served as the technical assistant and speechwriter to Intel's cofounder Gordon Moore, as well as executive vice president and later president Craig R. Barrett. From 1999 to 2000, Barrett supported her in a K-12 education initiative to develop a web portal to help teachers teach math and science classes.

¹⁰³"The School of Choice."

¹⁰⁴Case writer telephone interview with Julie Clugage, May 24, 2012. All subsequent quotations attributed to Clugage, unless otherwise noted, derive from this interview.

Intel's Growth Strategy: Enabling the Next Generation

Intel's business strategy had long been focused on enabling the next generation of technology. During its 45 years in business, Intel had been a key driver behind the continuous, rapid march of technological progress. For average consumers, it was extremely difficult to comprehend the extensiveness of that progress. Innovation was often attributed to those with Star Trek-style visions of the future; few people realized how difficult it was to manufacture the components necessary to execute those visions. During the company's early years, Intel cofounder Gordon Moore predicted that engineers would be able to double the number of transistors in the company's devices about every 2 years.¹⁰⁵ The accuracy of Moore's prediction explained why personal computers powered by Intel microprocessors were considered obsolete about every 2 years. Sustaining this pace of transistor growth, however, had become more difficult due to the materials science and the cost of manufacturing the increasingly small components that drove many electronic devices, from parts of trains and planes to video games. By 2012, an Intel factory cost approximately \$5 billion. While the 1971 Intel 4004 microprocessor executed 92,000 instructions per second, the contemporary Intel state-of-the-art Core processor could execute 92 billion. An individual whose typing speed had accelerated at that rate would be able to type Tolstoy's *War and Peace* in less than a minute. Even more dramatically, \$1.00 bought about 37 transistors in 1971; it bought two million in 2011. If automobiles had progressed at this rate, a Porsche would cost \$1.00 today.¹⁰⁶

Manufacturing the microprocessor components was only the beginning of the challenge Intel faced. Intel's extremely complex microprocessors (sometimes described as the brain of the computer) required other components (e.g., chip sets, memory) and software that could take advantage of their capabilities. The relationship between these elements could be described in biological terms: the microprocessor was the seed, but for it to grow and prosper, it required an ecosystem. The vocabulary of a business ecosystem being analogous to an environmental system was not popularized until the 1990s,¹⁰⁷ but Intel had always known that it must support multiple layers of its respective business ecosystem to succeed in its business strategy. The original electronic component decisions that the hardware and software companies made were at the root of those product announcements and the competitive battles over new electronic gadgets.¹⁰⁸

¹⁰⁵"Moore's Law Inspires Intel Innovation," Intel Corporation website, <http://www.intel.com/content/www/us/en/silicon-innovations/moores-law-technology.html>. Accessed 15 June 2012.

¹⁰⁶"40 Years of Intel Microprocessor Innovation, Following Moore's Law the Whole Way," Intel Corporation website, http://www.intel.com/content/dam/www/public/us/en/documents/promotions/Intel_40th_infographic_11-10-2011.pdf. Accessed May 2012.

¹⁰⁷Moore, James F. 1993. Predators and prey: A new ecology of competition. *Harvard Business Review*, May 1993, 75–86.

¹⁰⁸O'Brien, Kevin J. 2011. With new smartphones, high hopes for Nokia and Microsoft union. *New York Times*, October 26, 2011.

In the technology industry, as in many market areas in the twenty-first century global economy, business strategy was a lot more than simple competition between two companies making similar products. Growth was dependent on a firm's deep understanding of its unique competitive advantage¹⁰⁹ and the collaborative relationships it had established in the marketplace. For Intel to be successful, Intel sales engineers had to convince other engineers that its computer chips would run better on their hardware and software. An important design win in Intel's history occurred in 1981, when IBM selected the Intel 8086 microprocessor and Microsoft's operating system as the engine for IBM's entry into the personal computer industry. At the time, Moore and others thought that the PC would be used for little more than keeping track of recipes. Later, Moore laughed about his underestimation of that design win.¹¹⁰ Revenue and high margins often depended on how quickly new technology "ramped" – that is, how quickly consumer products manufacturers adopted and sold their products to end users.

For decades, Intel had been invested in creating relationships across the entire computing industry. Its engineers were key players in the development of major industry standards such as videoconferencing on personal computers (using programs such as Skype), USB connectors, and wireless Bluetooth technology. Each of these technological innovations was invented in Intel labs and further developed in conjunction with industry standards. The higher the integration level of its products – the more smoothly components and software worked together – the faster Intel could ramp up the technology. In the 1990s, for example, Intel manufactured fully assembled personal computers and servers in its plants in Oregon and Ireland. The company was a significant player in producing fully assembled computers that were resold to distributors and often relabeled, in much the same way as a Procter & Gamble food manufacturer would produce products that might be sold under the Procter and Gamble name, or under the private label of a local grocery distributor. Such relationships between Intel and distribution vendors helped the computer industry grow faster.

It was to Intel's benefit to offer manufacturers prototypes that they could freely use to bring fully functioning products to market more quickly. For instance, at the January 2012 Computer Electronics Show, Intel demonstrated a "prototype" smartphone based on an integration of its Atom technology and the Android operating system. That prototype design became the basis of phones later sold by Motorola and Lenovo (the Chinese company that in 2005 acquired IBM's Personal Computer Division).¹¹¹ Lenovo had become bigger than Dell, which was not surprising given

¹⁰⁹Porter, Michael E. 1985. *Competitive advantage: Creating and sustaining superior performance*. New York: Free Press.

¹¹⁰Sydell, Laura. 2012. Intel legends Moore and Grove: Making it last. NPR Morning Edition, April 6, 2012, <http://www.npr.org/2012/04/06/150057676/intel-legends-moore-and-grove-making-it-last>. Accessed 3 April 2013.

¹¹¹"Our Company," Lenovo website. http://www.lenovo.com/lenovo/us/en/our_company.html. Accessed 1 June 2012; "Lenovo and Motorola Adopting Intel's Atom 'Medfield' SoC," TechPowerUp.com, January 11, 2012. <http://www.techpowerup.com/158487/Lenovo-and-Motorola-adopting-Intel-s-Atom-Medfield-SoC.html>. Accessed 30 May 2012.

Intel president and CEO Paul Otellini's comments in the company's 2011 annual report that "total PC purchases were higher in China than in any other country, followed by the U.S., Brazil, and Russia."¹¹² Increasingly, growth in the tech industry was achieved by creating or expanding markets for personal computing products in regions that were just beginning to join the technology revolution that had been underway for decades in countries such as the United States, Japan, and members of the European Union.

The implications of emerging markets in these regions were significant. In his groundbreaking 2005 book, C. K. Prahalad introduced the concept that there was opportunity for economic growth and innovation through selling to the "bottom of the pyramid" (BoP), a term that referred to the billions of people who lived on less than \$2 per day. After Prahalad introduced this concept, many companies had sought to develop new markets in income-poor areas at the bottom of the economic pyramid. Importantly, as new markets emerged in developing economies, such as China and India, they often did not imitate Western models; acquiring market share required innovation to meet the specific needs of BoP producers and consumers.¹¹³

Thus, these growth opportunities were not without hurdles. In many cases, the business ecosystems required to address these markets did not exist and had to be created from scratch and tailored to the unique needs and challenges of the region. The material infrastructure and human resources required to sustain a business ecosystem, such as the system of vendor relationships that Intel depended upon to move from microprocessor to consumer product, might be lacking. In addition to the difficulties of building an ecosystem capable of supporting complex and shifting relationships between product design, manufacture, and distribution, growth opportunities were inherently limited in regions that suffered from high levels of poverty, and within communities that did not have the basic economic, logistical, and educational resources needed to benefit from new computing technologies and products.

China and India had a growing middle class, but poverty in countries such as Haiti could seem intractable. And in spite of this growing middle class, there were millions in China, India, and other swiftly developing countries who remained in abject poverty. Capitalism had helped create this emergent middle class, but the question of how to improve the lot of the poorest of the poor remained under debate. Some who studied poverty alleviation had come to the conclusion that philanthropic approaches dependent on NGOs, while certainly well meaning, were not sustainable over the long-term and, therefore, failed to produce significant, community-level changes. The effectiveness of new models, new ecosystems, and new kinds of business partnerships in alleviating poverty was becoming increasingly well documented.¹¹⁴

¹¹² Intel Corporation annual report, 2011.

¹¹³ "Grow grow grow: What makes emerging-market companies run," *Economist*, April 15, 2010, <http://www.economist.com/node/15879405>. Accessed 1 April 2013.

¹¹⁴ Werhane, Patricia H., Scott P. Kelley, Laura P. Hartman, and Dennis J. Moberg. 2009. *Alleviating poverty through profitable business partnerships: Globalization, markets, and economic well-being*. New York: Routledge.

Although Intel Corporation made its money primarily from selling individual components, its short-, medium-, and long-term success was based on its deep understanding of the ecology of both computer and competitive business systems. Intel had immense experience developing strong business ecosystems and its decision to use this experience in fostering effective educational systems reflected the company's view that quality education was a crucial engine for economic growth in emerging markets.

Intel's Programs to Transform Education

Intel had always supported the communities in which it manufactured products, and its values had included its desire to be a "great place to work"¹¹⁵ almost since its inception. Like many large corporations, Intel supported employee volunteerism and matched employee donations to educational institutions, but its efforts in education went far beyond those of most large companies. A company fact sheet stated, "Over the past decade alone, Intel and the Intel Foundation have invested more than \$1 billion and Intel employees have donated close to 3 million volunteer hours toward improving education in more than 60 countries."¹¹⁶ The company considered investment in global education a strategic imperative not only for making the world a better place but also for growing the total addressable market (TAM) for electronic products based on its technology. Although 2.3 billion people were online by the end of 2011, "70 % of the total households in developed countries had Internet, whereas only 20 % of households in developing countries had Internet access."¹¹⁷ In the late 1990s, Intel introduced Intel Teach, a program to support K–12 teachers in developing the skills to appropriately integrate computers into their teaching of math and science. Supporting over 10 million teachers in 70 countries, the Intel Teach program "improve[d] teacher effectiveness through professional development, helping teachers integrate technology into their lessons and promoting students' problem-solving, critical thinking, and collaboration skills."¹¹⁸

Expanded efforts in support of K–12 education were part of the legacy of Craig Barrett, who served as Intel's fourth chairman from 1998 to 2005. Barrett considered investments in education as a form of enlightened self-interest; he reasoned that

¹¹⁵"Life at Intel: Our values," Intel Corporation website, <http://www.intel.com/lifeatintel/values/>. Accessed 15 June 2012.

¹¹⁶"Intel Education Initiative: Empowering Tomorrow's Innovators," Intel News Fact Sheet. http://download.intel.com/newsroom/kits/education/pdfs/Intel_Education_FactSheet.pdf. Accessed 31 March 2013.

¹¹⁷International Telecommunication Union, "Key Statistical Highlights: ITU Data Release June 2012," http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights_June_2012.pdf. Accessed 30 March 2012.

¹¹⁸"Intel Teach Program Worldwide," Intel Corporation website, http://www.intel.com/about/corporateresponsibility/education/programs/intelteach_ww/index.htm. Accessed 15 June 2012.

Intel's future products and innovations, and even its long-term sustainability, depended on a well-educated populace of both future employees and technology users worldwide. He proposed that companies such as Intel had an important role to play in education advancement, since "information and communications technology (ICT) can transform education."¹¹⁹ In Barrett's view, "ICT has the power to trigger a shift from knowledge acquisition, which limits learning to rote memorization and parroting back facts, to knowledge creation, which involves 'learning how to learn.' The latter cultivates skills that are vital for today's knowledge economy, including critical thinking, collaboration, analysis, problem solving, communication and innovation."¹²⁰

Intel's overlapping social and business commitments to strengthening the knowledge economy exemplified the strategy of "shared value."¹²¹ According to Porter and Kramer, "The concept of shared value can be defined as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress."¹²²

Intel's fastest-growing markets were in countries with newly developing knowledge economies, such as China. Increasingly, emerging market governments had identified education as a key factor for building sustainable growth. Similarly, companies such as Intel were proposing that, in the current global economy, competitive advantage was not based on one's ability to beat out the competition by selling more of the same product. Rather, market share was won through relationships developed at all levels of the value chain, creating a vested interest in community development. One extra year of schooling could result in a 7 % increase in aggregate labor productivity.¹²³

The Education Market Platforms Group (EMPG) and the Intel Learning Series Products

Intel's primary business involved the sale of semiconductor components, but over its history, the company had focused on bringing total system solutions to the marketplace. In the 1980s, solutions meant helping manufacturers with manuals

¹¹⁹Barrett, Craig R. Commentary, *Forbes.com*, January 23, 2008, http://www.forbes.com/2008/01/22/solutions-education-barrett-oped-cx_crb_0123barrett.html. Accessed 30 March 2012.

¹²⁰Barrett.

¹²¹Porter, Michael E., and Mark R. Kramer. 2002. The competitive advantage of corporate philanthropy. *Harvard Business Review*, December 2002, 56–68; Porter, Michael E., and Mark R. Kramer. 2011. Creating shared value: how to reinvent capitalism – and Unleash a wave of innovation and growth. *Harvard Business Review*, January 2011, 62–77.

¹²²Porter and Kramer, 2002.

¹²³Coulombe, Serge, and Jean-François Tremblay. 2006. Literacy and growth, *Topics in Macroeconomics* 6(2): 34. Retrieved from <http://www.sba.muohio.edu/davisgk/growth%20readings/10.pdf>. Accessed 3 April 2013.

and engineering support to design Intel products into cars, automation equipment, and traffic lights. In the 1990s, the focus became personal computer motherboards, systems, and development of innovations needed to grow the industry, such as Ethernet, USB, and Bluetooth, as well as enterprise system solutions through its consulting services. In the twenty-first century, the company had enabled technology growth by building prototypes (such as the Android smartphone) and creating programs that supported the distribution of educational technology and content worldwide.

EMPG, initially called the Emerging Markets Platform Group, was conceived in November of 2004. Engineers and social scientists based in China were sent to regional offices in Bangalore, Cairo, and São Paulo to explore how technology might be used to support people in these markets. For example, based on the ethnographic research it conducted in India, the team came up with a product called the Community PC that could be used as a kiosk in community centers to help locals get items such as government permits.¹²⁴ Products such as these had been known to substantially reduce corruption, which was often a problem in emerging markets.¹²⁵ Most of EMPG's initial products helped Intel learn more about the implementation of technology in different markets, but they did not lead to volume component sales. In a number of these emerging countries, however, governments were interested in expanding technology in schools. Consequently, education was selected as the volume market to which EMPG could dedicate itself with greater focus, and by 2011 the department's name had been changed to Education Market Platforms Group – the same acronym, but with a more focused target market.

By 2006, Intel had developed an initial prototype of a ruggedized netbook called the Intel Classmate PC. In 2007, it announced the product as a reference design from which manufacturers could build their own product. More importantly, Intel began to build an ecosystem, called the Intel Learning Series, by developing an alliance program that by 2012 included over 500 companies that sold software, hardware, peripherals, and services to the education market. Since 2007, the company had supported the distribution of over ten million Classmate PCs worldwide. Most had been sent to places outside of the U.S.: over two million in Europe, the Middle East, and Africa; almost 150,000 in Thailand; 4,000 in Japan; four million in Latin America; 9,600 in China; and 152,600 in North America.¹²⁶

Many of the Classmate PC manufacturers were small companies, but in 2011, Lenovo and Samsung signed on as alliance partners to produce designs “compliant” with Intel Learning Series designs. In the software arena, partners included companies such as LEGO, which produced robotics kits to support the teaching of math

¹²⁴Unruh, Greg. 2011. Intel emerging market platforms group. Thunderbird School of Global Management (2011), 14.

¹²⁵Prahalad, C. K. 2005. *The fortune at the bottom of the pyramid: Eradicating poverty through profits*. Upper Saddle River, NJ: Pearson Education/Wharton School Publishing.

¹²⁶“Education Around the World – Intel Education Solutions,” Intel Corporation website, <http://www.intel.com/content/www/us/en/intel-learning-series/world-wide-deployments.html?wapkw=education+series>. Accessed 1 July 2012.

and science, and Waterford Institute, a nonprofit with 35 years of expertise in supplementing traditional English literacy instruction with technology-based learning. While some of these global alliance partners were not household names in the U.S., they were significant players in their local markets, providing local language educational software, and peripherals such as whiteboards, science probes, microscopes, and other technological tools for enhancing the quality of education. Intel had identified a unique core of Education Solution Providers (ESPs) who brought together all the elements required to service a particular local environment. These were complete educational solutions that incorporated tools for teachers and tracking of students' progress. In 2012, EMPG promoted three reference design systems: a "clamshell" Classmate PC that opened and closed like a traditional laptop, a convertible Classmate PC with a touch screen that swiveled into tablet mode, and a new education tablet announced in 2012 called Studybook. Manufactured to Intel specifications, the systems were then able to use alliance software that had been optimized to work smoothly on these tailor-built systems. The manufacturers and resellers determined the final price to the customer, but the 2012 pricing of the computers, depending on the country, model, and volume purchased, was in the \$200 to \$500 range per device.

Enter the Intel Education Service Corps (IESC)

Within this ecosystem, the Intel Education Service Corps (IESC) provided a "specialized sales force" of Intel employees like John Cartwright to serve the unique needs of NGO customers, such as Choix, in Haiti. Julie Clugage, the founder of IESC, described the goal of EMPG as providing the "catalyzation" for the ecosystem of software and hardware partners, education providers, and NGOs. Before joining Intel in 2002, Clugage spent four years working for the World Bank and the Inter-American Development Bank in Washington, DC, as well as two years at a teacher-training high school in rural Guatemala. After getting her MBA from University of California, Berkeley, she joined Intel and rose to the position of chief of staff for the VP of corporate affairs, where she supported Intel's corporate social responsibility efforts in education as well as Intel's relations with governmental development agencies and NGOs.¹²⁷ In 2009, Clugage transitioned to EMPG to work with alliance partners throughout the world in providing Intel-based education solutions.

Clugage discovered that her colleagues in other departments were interested in getting involved with these global educational initiatives. Inspired by this employee interest in participating in EMPG's support of educational efforts in emerging markets, she conceived of the IESC, which drew volunteers for EMPG projects

¹²⁷"Meet the Bloggers – Julie Clugage," Intel Corporation CSR@Intel website, <http://blogs.intel.com/csr/authors/>. Accessed 2 Aug ,2012.

from a pool of Intel employee applicants. It took months of negotiating, but Clugage won the support that she needed to launch the IESC program in August of 2009. The mission of IESC was embodied in the “triple-win” outcome goal: cost-effective visibility and reputational benefits for Intel in emerging markets, benefits to employee job satisfaction and skills development, and increased availability of quality education in target communities.

Clugage was excited to have received 80 applications for 10 available slots during the first week of the program’s life: “It’s sort of like starting the Intel version of the U.S. Peace Corps, with a focus on using our technical and human resources to improve the quality of global education. It has been a dream of mine for about five years now, so it really was an occasion to do a little dance outside my gray cube when we launched this program.”¹²⁸ Employee enthusiasm for the opportunity to participate in this program was reflected in the e-mails and applications Clugage received during the launch: “In 19 years at Intel, I have never been so excited about a potential opportunity;” “This program is so cool! I’m so proud to work for Intel;” “Thanks for taking such a bold approach in these turbulent economic times.”¹²⁹

As of November 2012, the IESC had supported 39 projects, sending 207 volunteers to 16 countries. 1,000 teachers and administrators and 7,500 students had been directly trained, and 45,000 more were slated to benefit from these ongoing projects. In addition, IESC project teams had distributed 1,400 Classmate PCs. These outcomes represented the contribution of \$4 million from Intel in the form of pro-bono labor. Each project involved sending four to six Intel employees into a developing nation to provide support for the integration of Intel Classmate PCs in schools. NGOs, such as World Vision, CARE, Save the Children and others, were brought together with allied hardware and software vendors to form a nexus of business and social organizations within an ecosystem tailored to the site-specific needs of the local institutions served by Intel’s education products. In addition to the project with Choix in Haiti, the IESC had partnered with many local NGOs on projects in Africa, Asia, and South America (see Exhibit 1 for examples). IESC deployments were not conceived as one-off projects. The aim was to bring every project to the point of local sustainability, which involved different levels of commitment at each site. Six different teams went to Vietnam over a 3-year period (2010–2012), for example, although the goal was that each project would “graduate” and become self-sustaining after approximately three visits over a 1- to 2-year period.

Project team members had to secure their manager’s approval for the 2-week “in the field” deployment as well as a 4- to 8-week, part-time preparation and training period, which was a challenge in Intel’s intense and results-oriented culture.¹³⁰

¹²⁸Clugage, Julie. “Announcing the Intel Education Service Corps,” Intel Corporation CSR@Intel website September 3, 2009, http://blogs.intel.com/csr/2009/09/announcing_the_intel_education/. Accessed 3 April 2013.

¹²⁹Clugage.

¹³⁰Johnson, Cory. 2012. Intel: An engineering culture. *Bloomberg Businessweek* video, 2:14, May 15, 2012, <http://www.businessweek.com/videos/2012-05-15/intel-an-engineering-culture>. Accessed 30 March 2013.

Thus, not only did the employee have to be motivated, but his or her manager and teammates also had to be willing to support this effort. Teams were made up of employees from around the world who brought a variety of skills to the project. Valued skills for a particular site might include experience with computer hardware and software, teaching, local languages, or cultural knowledge of the country being supported. During the estimated 40 h of preparation and training, team members met over the phone and with their client to solidify equipment requirements and perform as much testing of the actual configurations (combination of hardware and software) to be deployed as possible. The planning stage was followed by 2 weeks of actual in-country experience, and an additional 2 weeks after the trip, during which members spent 10 h preparing a project debrief. The team had to summarize what went well, what challenges remained, and what recommendations it had for the NGO, for EMPG employees, and, if relevant, the next IESC team.

Intel was clear about its guidelines for the local NGO partners selected for IESC support. These partner organizations had to purchase the necessary technology infrastructure (Intel did not donate equipment for IESC projects), outline a clear description of the scope of work or project needs, and provide assistance in identifying providers for local lodging, meals, and transportation, as well as on-the-ground guidance for the Intel volunteers. Intel's human resources department funded the volunteers' travel expenses, which represented about 90 % of Intel's out-of-pocket costs. Employees often shared rooms, and it was not uncommon for volunteers to sleep on the floor or even in tents in rural locations without hotels. The Intel volunteers were primarily tasked with providing technical assistance, training, and support in defining the scope of work.

It was not easy to be selected to become a member of the IESC. Cartwright noted that Intel selected its "best and brightest" for these projects. During the July 2012 selection cycle, 326 Intel employees completed the application. The IESC staff selected roughly 90 of these applications for interviews and 40 were selected for assignments to take place between September and November. Thus, only 12 % of those who applied were ultimately selected as IESC volunteers, a lower admissions rate than many of America's top business schools.¹³¹ Clugage reported that IESC volunteers typically returned to work excited and transformed. The teams formed new relationships and bonds with Intel people from many different countries who had varied cultural and life experiences, as well as with students, teachers, and NGO representatives from around the globe. For example, Dr. Joya Chatterjee, deployment manager for EMPG, spoke with enthusiasm about convincing a 15-year old in her native India that he could go to college someday. Chatterjee concluded her video story by saying that she "found the soul of Intel" in her work with IESC.¹³²

¹³¹Sheedy, Kelsey. 2012. 10 business schools with the lowest acceptance rates. *U.S. News & World Report*, March 15, 2012, <http://www.usnews.com/education/best-graduate-schools/the-short-list-grad-school/articles/2012/03/15/10-business-schools-with-the-lowest-acceptance-rates>. Accessed 30 March 2013.

¹³²"Dr. Joya Chatterjee at Upgrade Your Life III," YouTube video, 0:34, posted by "channelintel," July 18, 2011, <http://www.youtube.com/watch?v=4j2SqDbuVpc>. Accessed 3 April 2013.

Gary Shaye saw the potential for a match between Intel's strategic objectives in education and emerging markets and Haiti's educational needs, which had intensified in the wake of the 2010 earthquake. Shaye had worked with Intel as an NGO client previously, in Bolivia, and was now the country director for Save the Children in Haiti. By chance, he had also met Laura Pincus Hartman, the founder of Choix, when seated next to her on a plane from Port-au-Prince, Haiti to Miami, Florida. Hartman had been exploring options for Choix's technology solutions and training, but had encountered hurdles with other programs that did not provide training and education on a long-term basis. Shaye introduced Hartman to Clugage, and the two women quickly discovered a congruent vision. Both Choix and Intel were interested in promoting twenty-first-century skills through technology, with the aim of revolutionizing education. Clugage determined that Choix was a good fit with IESC's program requirements, and in turn, Intel offered the services and support, through IESC, that Hartman had been unable to find elsewhere. The question that remained was whether the partnership that Intel and Choix envisioned could be implemented in Haiti.

Haiti: Land of Mountains

In front of Haiti's National Palace in Port-au-Prince stood a statue named Nèg Mawon (Creole for "brown man") designed to represent the spirit of the proud Haitian people who fought off slavery to gain their freedom. In one hand, Nèg Mawon held a conch shell used to call escaped slaves to meetings and a machete used to cut sugarcane and fight off the French. In his other hand was a handcuff and broken chain. In 1492, Columbus claimed the island of Hispaniola for Spain, but over the next several centuries the French and Spanish fought to control the large island, which eventually consisted of two distinct and independent democratic countries: Haiti and the Dominican Republic.

By the middle of the sixteenth century, an indigenous population (called Tainos) of approximately one million had dwindled to a few hundred survivors. Many had died from working the gold mines, while others perished from diseases caught from their Spanish landlords. When the gold mines were depleted, Spain lost interest in the territory, ceding the western part of the island to the French in 1697. The French named its territory Saint-Domingue, and it soon became the center of the infamous triangular trade route: manufactured goods went from Europe to Africa, where they were exchanged for slaves, who were then brought to Saint-Domingue and other Caribbean countries. The slaves worked the sugarcane fields, and the processed sugar and rum were then sold back to Europe.

By the end of the eighteenth century, of a population of 519,000 people, 87 % were slaves, 8 % were white, and 5 % were freed men.¹³³ The island, producing

¹³³Helen Chapin Metz, ed., A Country study: Haiti. In *Dominican republic and Haiti: Country studies* (Washington, DC: Federal Research Division, 2001), <http://lcweb2.loc.gov/frd/cs/httoc.html#ht0101>. Accessed 3 April 2013.

approximately 40 % of the world's sugar, had become one of the richest colonies in the world.¹³⁴ The members of the colonialist culture developed lavish lifestyles, and cruelty to slaves was accepted practice; slave insurgencies were common. After many years of fighting for liberation from their oppressors, the slave population fought off Napoleon's armies in 1804. The island became the first black republic in the Western Hemisphere, and the only country created by a successful slave revolt. Jean-Jacques Dessalines, a former slave turned general who led the revolt, renamed the country Haiti from the Taino word meaning "land of mountains."¹³⁵

The country's first constitution forbade whites from owning land and decreed that all Haitians, both mulattoes and blacks, were to be called "blacks." The children of unmarried French planters and female slaves had gained their freedom much earlier under *Le Code Noir* (the Black Code).¹³⁶ Adopted under Louis XIV, the code defined the status of slaves in the various French colonies. Lighter-skinned Haitians freed prior to 1804 grew up speaking French and saw themselves as superior to *les nouveaux libres* (the newly free), who had gained their independence through the Dessalines-led revolution. The sugar plantation system collapsed, and this "emergent peasantry" in the rural areas remained illiterate, while the more literate plantation owners moved to the cities and emerged as Haiti's ruling class.¹³⁷

In the early nineteenth century, the Vatican and the United States refused to recognize Haiti as a free nation. The Vatican's lack of recognition limited the Haitian state's ability to establish a solid education system, since Catholic religious orders were a major source of formal education in that era. Other factors affected the stability of Haiti's development. Between 1843 and 1915 (the year that the U.S. began a Haitian occupation), 22 different heads of state led Haiti's government. For 19 years (1915–1934), Haiti was a protectorate of the United States. The period of American occupation was characterized by stability, with significant improvements in public health, economic development, and basic infrastructure such as roads, bridges, and telephone service. But much of this activity was based in and around Port-au-Prince, resulting in increased centralization of the economy in urban Haiti. Additionally, order was established and maintained "largely by white foreigners with deep-seated racial prejudices and a disdain for the notion of self-determination by inhabitants of less-developed nations," a situation that was deeply resented by the majority of Haiti's mulatto and black citizens.¹³⁸

Class and racial conflicts persisted after the Americans left, and two light-skinned presidents were elected between 1935 and 1946. At this point, student protests

¹³⁴Dash, J. Michael. 2001. *Culture and customs of Haiti*. Westport, CT: Greenwood.

¹³⁵Dash, 2, 6.

¹³⁶The Black Code itself did not allow for the mistreatment of slaves, and it was in many respects ignored. It outlined that slaves could not be raped – and if they were, they were to be married and freed. Families could not be separated. If freed, slaves became French citizens. These laws were considered by some scholars to have been progressive for their time.

¹³⁷Dash, 7.

¹³⁸"Occupation of Haiti (1915–34)" GlobalSecurity.org Military page, http://www.globalsecurity.org/military/ops/haiti19.htm?&lang=en_us&output=json. Accessed 16 April 2013.

forced the president into exile and the military stepped in, orchestrating an election in which the emerging middle class of blacks from the northern region brought François Duvalier to power as president.¹³⁹ In 1957, Duvalier was elected on a pro-black nationalist platform, with strong support from the military. His early paternalistic attitude toward supporting those living in poverty and ill health gained him the name “Papa Doc.” Duvalier violated the constitution to run for reelection in 1961, which he won by “an official tally of 1,320,748 votes to zero.”¹⁴⁰ He proceeded to declare himself “president for life” in 1964. Upon Duvalier’s death in 1971, his 19-year-old son, Jean-Claude – who would come to be known as “Baby Doc” – took over as president.

Though largely choosing to leave day-to-day governance to others, “Baby Doc” Duvalier’s regime was initially received positively by many Haitians, as well as by foreign observers.¹⁴¹ In 1971, the United States restored its aid program to Haiti, which had been severed during the period of the elder Duvalier’s rule. Over time, however, “Baby Doc” Duvalier lost domestic and international support as a result of corrupt practices – which included “drug trafficking, pilferage of development and food aid, illegal resale and export of subsidized oil, and manipulation of government contracts” – as the country deteriorated into deeper poverty.¹⁴² In 1986, threatened by riots and widespread popular discontent, and pressured by the United States, “Baby Doc” escaped to exile in France.¹⁴³

After a period of provisional governments, Jean-Bertrand Aristide, an outspoken former Catholic priest and critic of Duvalier, won 67 % of the vote in the 1990 election, which was deemed free and fair by international observers.¹⁴⁴ Early on, Aristide attempted to dissipate the army’s power and to collect back taxes from the country’s elite. He was ousted by a military coup after only 7 months, however. Because of severe repression and deteriorating economic conditions, thousands of Haitians tried to escape by boat to the coast of Florida. During 1991 and 1992, the U.S. Coast Guard rescued more than 40,000 Haitians from the sea; in all likelihood, thousands more drowned. For two and a half years, the United States and the United Nations imposed economic sanctions. Eventually, in return for amnesty, the junta agreed to step down, allowing U.S. troops to enter Haiti and return Aristide to power in September of 1994. When Aristide stepped aside after the conclusion of his term in 1995, his prime minister, René Préval, won the ensuing election.

¹³⁹ Metz.

¹⁴⁰ Metz.

¹⁴¹ Metz.

¹⁴² “Haiti’s History,” PBS Frontline/World website, December 13, 2007, http://www.pbs.org/frontlineworld/rough/2007/12/haiti_belos_sonlinks.html. Accessed 30 March 2013.

¹⁴³ At the time of preparation of this case study, the ends of the Aristide and “Baby Doc” Duvalier stories had not yet been written. Both former leaders returned to Haiti in the aftermath of the earthquake. The Haitian justice system is ill-equipped to deal with their return. See Laurent Dubois, *Haiti: The Aftershocks of History* (New York: Metropolitan, 2012); Paul Farmer, *Haiti: After the Earthquake* (New York: PublicAffairs, 2011).

¹⁴⁴ PBS.

By 2000, corruption in Haiti, along with human rights violations and election fraud, had halted development assistance from other countries. A disputed election in 2001 returned Aristide to power, but political turmoil, violence, and a breakdown of government institutions followed. Haiti suffered a deep recession from its loss of foreign aid and protests ensued. In 2004, armed rebels demanded Aristide's ouster and the U.S. military airlifted him to safety. United Nations peacekeepers, led by American forces, established an interim government until elections for president and the National Assembly were held in early 2006. The elections were not without controversy, and some claimed fraud; but a majority re-elected Préval. On January 10, 2010, when the 7.0-magnitude earthquake struck Haiti, Préval was still serving as president, and the United Nations's mission became exponentially larger.

As these numerous political and military power struggles unfolded across two centuries of Haiti's national history, rural peoples were particularly disadvantaged. In the early twenty-first century, 80 % of Haitians lived below the poverty line, unemployment was estimated to be over 40 %, and more than half of the government's budget came from outside sources. In 2009, the World Bank forgave more than \$1.0 billion of the country's debt through the Highly-Indebted Poor Country initiative. Michel Martelly, elected to the presidency in April of 2011, campaigned on a pledge to initiate greater foreign investment to make the country more self-sustainable.

The State of Education in Haiti

The January 2010 earthquake devastated Haiti, a country that was already the poorest in the Western Hemisphere. While 380,000 people were still living in tents as of 2012,¹⁴⁵ initially there were 1.5 million displaced from their homes out of a population of about 10 million. The severity of damage caused by an earthquake was tied to both the density of the population and the quality of a location's buildings. In the case of Haiti, the severity was enormous. There were 230,000 reported dead in the tragedy; by comparison, the 1989 earthquake of similar magnitude in San Francisco resulted in 63 fatalities.

The education sector, like nearly all aspects of life in Haiti, was deeply affected. Indeed, it was difficult to speak accurately of the state of education in Haiti by reference to pre-quake data, and postquake data was unavailable in many relevant areas. Haiti had struggled to provide basic primary education prior to the 2010 earthquake, falling significantly short of achieving the state's aim of universal educational access. Many of the challenges that Haiti faced in delivering quality basic education to all of its children, while exacerbated by the quake, had roots in entrenched problems that predated the 2010 disaster. As the government acknowledged in its March 2010 Post-Disaster Needs

¹⁴⁵Sontag, Deborah. 2012. Earthquake relief where Haiti wasn't broken. *New York Times*, July 5, 2012.

Assessment (PDNA) report, “Overall, the Haitian education system already presented deficiencies before the earthquake that made it unfit to contribute to socio-economic development.”¹⁴⁶

Education Challenges Before the 2010 Earthquake

The constitution of the Republic of Haiti (1987) “guarantees the right to education,” declaring that the state and its territories “must make schooling available to all, free of charge, and ensure that public and private sector teachers are properly trained.”¹⁴⁷ Primary schooling and free access to “classroom facilities and teaching materials” were compulsory formal rights for all elementary-age children. The primary school completion rate, however, was estimated at 20 % in 1991.¹⁴⁸ The government initiated a 10-year education plan in 1997 with the goal of achieving universal access to education.

A decade later, the Ministry of Education reported progress toward this goal, with an estimated 67 % of Haitian children completing primary education.¹⁴⁹ Approximately 400,000 children from ages 6 to 11 remained without access to basic education, however. Few of Haiti’s primary schools were state-funded public institutions, reflecting a trend of increasing privatization of education. In the mid-1980s, private schools represented approximately 60 % of Haiti’s schools; during the 1990s, this number had increased to nearly 75 %¹⁵⁰; and by the mid-2000s, between 80 % and 90 % of Haiti’s schools were privately run, with many charging tuition fees that represented a significant entry barrier for low-income students. The Ministry of Education’s census reported that more than three-quarters of these private schools did not have the required license.¹⁵¹ Of the population of enrolled primary school students, 30 % did not stay beyond third grade and 60 % abandoned schooling by sixth grade.¹⁵² Despite the evident challenges to primary school access, however, there remained “a strong social demand for education among Haitian

¹⁴⁶ Adams, Anda, and Rebecca Winthrop, *The Re-foundation of Haiti: Building a strong base with education*. *Brookings Institution website*, March 23, 2010, http://www.brookings.edu/research/opinions/2010/03/23-haiti-education-winthrop#_ftnref6. Accessed 30 March 2013.

¹⁴⁷ “National Constitutional Provisions – Haiti,” Right to Education Project website, <http://www.right-to-education.org/country-node/349/country-constitutional>. Accessed 31 March 2013.

¹⁴⁸ UNICEF, Division of Policy and Practice, Statistics and Monitoring Section, “Education Statistics: Haiti,” May, 2008, http://www.childinfo.org/files/LAC_Haiti.pdf. Accessed 30 March 2013.

¹⁴⁹ Woolf, Laurence. *Education in Haiti: The way forward*. Inter-American Dialogue website, September 26, 2008, <http://thediologue.org/page.cfm?pageID=32&pubID=1605&s=Education%20in%20Haiti:%20the%20way%20forward>. Accessed 30 March 2013.

¹⁵⁰ Salmi, Jamil. *Equity and quality in private education: The Haiti paradox*. The World Bank, LCSDH Paper Series no. 18, May 1998, http://www.hopeforhaiti.com/uploads/world_bank.pdf. Accessed 30 March 2013.

¹⁵¹ Lunde, Henriette. *Youth and education in Haiti: Disincentives, vulnerabilities and constraints*. *Fafo*, 2008, <http://www.fafo.no/pub/rapp/10070/10070.pdf>. Accessed 29 March 2013.

¹⁵² “UNICEF Humanitarian Action: Haiti in 2008,” UNICEF Humanitarian Action Report 2008, http://www.unicef.org/har08/files/har08_Haiti_countrychapter.pdf. Accessed 29 March 2013.

families as evidenced by the high percentage of household income spent on schooling – approximately 15 % per child.”¹⁵³

In 2007, Fafo, a Norwegian nonprofit organization, conducted an extensive qualitative research study in which it interviewed Haitian families with school-age children to better understand the incentives and disincentives to education access.¹⁵⁴ The study documented families struggling to raise sufficient money to send their children to school, and reported high barriers that interfered with children’s ability to progress from one grade to the next. Some of the major issues identified by the study were cost, the constraints of the rural agricultural economy, the quality of teaching, and poor physical infrastructure.

The Fafo study reported that while the mandated cost of public school was set at \$2.50 per year, families were also required to pay for their children to take the state-mandated exams at the end of fourth, seventh, and ninth grades. Children frequently dropped out because families were unable to pay these fees or because they failed the exams and became discouraged over the prospect of repeating the same grade. Public schools were overcrowded, and though prohibited from dismissing students because of low performance, the schools frequently did so due to capacity issues. While students were required to have promotion exams at the end of fourth, seventh, and ninth grades, many schools administered tests more frequently, requiring that parents pay test fees, which resulted in the cycle of repeated grades noted above. Elite private schools for students from high-income families could be found in the major cities, but there also existed so-called “lottery schools” on most city street corners. The nickname for these lower-quality private schools was derived from both the small lottery stands on many street corners and the assumption that children had about the same probability of graduating as they did of winning the national lottery.

The quality of teachers and instruction also contributed to the challenges facing the Haitian education system prior to the earthquake. The majority of teachers lacked training, with most having only completed a few more grades than the students whom they were teaching.¹⁵⁵ During the Duvalier era, many educated Haitians left for the United States, Canada, and Europe. The difficulty of training and retaining qualified teachers, especially in rural areas where pay rates were lower, was one of the biggest challenges the Fafo report identified in improving the education sector.¹⁵⁶ NGOs such as the United Nations Educational Scientific and Cultural Organization (UNESCO) provided teacher training, but reported that once teachers become qualified for better paying positions, they often relocate to cities and better opportunities than teaching.¹⁵⁷

¹⁵³United States Agency for International Development, Haiti: Education Overview, 2006, <http://web.archive.org/web/20071017050613/http://www.usaid.gov/ht/education.htm>. Accessed 30 March 2013.

¹⁵⁴“About Fafo,” Fafo website, <http://www.fafo.no/english/hist/abo-Fafo.html>. Accessed 15 June 2012, and Lunde.

¹⁵⁵Lunde.

¹⁵⁶Lunde.

¹⁵⁷“UNESCO’s Education Priorities in Haiti,” UNESCO website, http://www.unesco.org/new/en/education/themes/planning-and-managing-education/policy-and-planning/single-view/news/unescos_education_priorities_in_haiti/. Accessed 30 March 2013.

The Fafo study found that obstacles to access to basic education were particularly steep in rural areas, where the density of schools was much lower than in urban areas, and the agricultural economy did not generate enough income for many families to cover the cost of attending a local school. During the rainy season, poor infrastructure contributed to attendance problems, given that some students, especially those in higher grades, had to walk for up to two and a half hours to get to a school. Suffering scarce resources, families might select the oldest or the brightest from among their children to send to school, but issues such as fees, lack of shoes, or requirements to work in the fields resulted in few children completing fourth grade.¹⁵⁸ In addition, many rural teachers stated that they had to find supplemental work in agriculture to make a living, reducing their teaching availability during harvest season.¹⁵⁹ The challenges to school access increased for upper grade levels. More than a quarter of rural households did not have an upper-grade-level school within 15 km, and therefore, as the 2008 study stated, “While more than 40 % of the children in and around Port-au-Prince continue to seventh grade, less than 10 % of the children in rural areas do.”¹⁶⁰

The Haitian government itself recognized that the overall quality of education was often inadequate or lacking in relevance in the areas identified by Fafo’s research.¹⁶¹ A study by the U.S. Agency for Economic Development (USAID) and the Haitian Institute for Education,¹⁶² as well as a strategic plan developed by the Haitian Educational Ministry,¹⁶³ highlighted the aforementioned issues, but they also described problems with the content and delivery methods predominant in Haitian education. Many Haitian schools were using methods that had not changed in 50 years. There was an emphasis on rote learning and regurgitation that had been shown to discourage the development of strong critical thinking and analytical skills.¹⁶⁴ Teachers lacked tools, books, and the ability to accommodate different modes of learning, such as the use of experiential and applied learning strategies. In 2009, fewer than 40 % of Haitians had access to electricity and only 8 % used the Internet,¹⁶⁵ limiting the resources available in many homes and classrooms.

Language skills also constrained academic success for many Haitians. Though Haitian national exams were administered in French, teachers were often Creole

¹⁵⁸ Lunde.

¹⁵⁹ Lunde.

¹⁶⁰ Lunde.

¹⁶¹ Lunde.

¹⁶² The American Institutes for Research and L’Institut Haïtien de Formation en Sciences de l’éducation (IHFOSED), “Les institutions de formation initiale des enseignants du fondamental et du secondaire en Haïti,” August 2007, http://pdf.usaid.gov/pdf_docs/PNADK047.pdf. Accessed 30 March 2013.

¹⁶³ Ministère de l’Éducation Nationale et de la Formation Professionnelle (MENFP), “Bulletin d’information du Ministère de l’Éducation Nationale et de la Formation Professionnelle,” March 2012, http://www.eduhaiti.gouv.ht/PDFs/journal_menfp.pdf. Accessed 30 March 2013.

¹⁶⁴ Lunde.

¹⁶⁵ World Bank, Data by Country: Haiti, http://data.worldbank.org/country/haiti#cp_wdi. Accessed 31 March 2013.

speakers who were poorly educated in French. Haitian Creole was a combination of seventeenth-century French and a variety of African dialects. Creole became an official language as a result of the 1987 revisions to the Haitian Constitution, but its orthography was not formalized until 1979, and it remained far from standardized. Consequently, the vast majority of people in Haiti spoke Creole, but few wrote or published formally in the language. French was the official language of government, the courts, street signs, and all educational testing, despite the fact that many people, particularly in rural areas, neither spoke nor wrote proficiently in French.¹⁶⁶ Both Creole and French were considered official languages, but they were unequal in status. For the most part, French was the language of the elite in Haiti, and English was increasingly the language of global commerce spoken by NGO leaders and high-level government officials. Creole was the language of the majority of low-income Haitians. According to some scholars, the exclusive use of French in the classroom resulted in socioeconomic discrimination against Creole speakers who faced a high bar to educational access as a result of French-only educational practices.¹⁶⁷

Strike and Aftermath of the 2010 Quake

The January 2010 earthquake devastated the already-fragile Haitian education system. Approximately 38,000 students, 1,347 teachers, and 180 school system employees were killed. More than 4,000 school buildings were destroyed, as well as the Ministry of Education building itself. At least half of the country's 15,000 primary schools and 1,500 secondary schools were badly damaged. First Lady Elizabeth Préval stated in a March 2010 speech at George Washington University that the quake and its aftermath was a "nightmare" that left at least 1.5 million students without access to education.¹⁶⁸ Other estimates placed the number of children displaced from schools at 2 million. First Lady Préval voiced a desire to go beyond restoring Haiti's schools to the conditions prior to the disaster:

'The government should guarantee free education to all the children enrolled in the schools,' Préval said. 'This will be our first demonstration for the dignity and respect for the Haitian community, and the pain that has been brewing since January 12. I understand that many schools have been damaged from the earthquake, but I urge the government to do whatever necessary to bring children back to school as soon as possible.'¹⁶⁹

In May 2010, President Préval "gave the Inter-American Development Bank (IDB), [Haiti's largest multilateral donor] a mandate to work together with Haiti's

¹⁶⁶ Dash.

¹⁶⁷ Luzincourt, Ketty, and Jennifer Gulbrandson. 2010. Education and conflict in Haiti: Rebuilding the education sector after the 2010 earthquake. *United States Institute of Peace Special Report 245*, 2010, <http://www.usip.org/files/resources/sr245.pdf>. Accessed 31 March 2013.

¹⁶⁸ Cahn, Emily. Haitian first lady seeks change Amid reconstruction. *GW Hatchet*, March 11, 2010, <http://www.gwhatchet.com/2010/03/11/haitian-first-lady-seeks-change-amid-restoration/>. Accessed 31 March 2013.

¹⁶⁹ Cahn.

Ministry of Education and National Education Commission to prepare a major reform of the Haitian education system.”¹⁷⁰ According to the plan, Haiti’s private schools would remain privately run, but would be publicly subsidized with support from several international organizations partnering with the IDB to provide grants totaling \$500 million in the first 5 years.¹⁷¹ Private school funding would be contingent upon schools meeting certification requirements that would increase in stringency over time. Also included in the ambitious plan was a modernization of the curriculum, training programs for the country’s teachers, the construction of at least 625 new primary schools, a tripling of the number of public schools. Upon election in 2011, Martelly pledged to continue support of the education reform agenda.

In the 2 years after the earthquake, a vast array of international and domestic organizations, as well as the IADB-led partnership and the Haitian government, had worked to improve education conditions. The Ministry of Education completed its first census in nearly a decade, reporting that by mid-2011, Haiti had 16,072 schools – a significant increase from prequake estimates – 44 % of which were located in urban areas and 56 % of which were in rural areas.¹⁷² Of the total number of current schools, 88 % were privately run and 12 % were public. There were now more children in school than before the earthquake.¹⁷³

Progress had been slow, however. On issues of school health, UNICEF reported that the most pressing issue facing the Ministry of Education was “the multiplicity of actors with different and sometimes contradictory points of view. Scattered interventions were characterized by duplication and wasting money.”¹⁷⁴ Infrastructure remained a significant obstacle. Electricity was a greater challenge in 2012 than it was a year earlier.¹⁷⁵ Two years after the earthquake, a World Economic Forum (2012) report concluded that Haiti’s information technology infrastructure was the weakest of the 142 countries included in its study. Other challenges to implementation of education reform included a slow rate of pledged donor funds reaching Haiti, party opposition within the Haitian legislature, and limited coordination between state and local governments and between the state and civil society.¹⁷⁶

¹⁷⁰“Haiti Gives IDB Mandate to Promote Major Education Reform,” Inter-American Development Bank (IDB) news release, May 15, 2010, <http://www.iadb.org/en/news/news-releases/2010-05-15/haiti-gives-idb-mandate-to-promote-major-education-reform,7150.html> (accessed March 31, 2013).

¹⁷¹“Haiti’s Schools,” *New York Times*, August 17, 2010.

¹⁷²http://www.eduhaiti.gouv.ht/PDFs/journal_menfp.pdf.

¹⁷³Press Conference by Deputy Special Representative of Secretary-General for Haiti, United Nations website, November 29, 2011. http://www.un.org/News/briefings/docs/2011/111129_Haiti.doc.htm. Accessed 31 March 2013.

¹⁷⁴“UNESCO in action: Working together for Haiti,” UNESCO Bureau of Field Coordination report, 2010. <http://unesdoc.unesco.org/images/0019/001905/190539e.pdf>. Accessed 31 March 2013.

¹⁷⁵“The ease of doing business in Haiti,” The World Bank and International Finance Corporation (IFC) website, 2012, <http://www.doingbusiness.org/data/exploreeconomies/haiti>. Accessed 31 March 2013.

¹⁷⁶Cohen, Marc J. Haiti – The slow road to reconstruction: Two years after the earthquake. Oxfam International website, January 10, 2012, <http://www.oxfam.org/en/policy/haiti-slow-road-reconstruction>. Accessed 9 Nov 2012.

Research by the World Bank asserted that each additional year of education had the potential to increase an individual's income by 10 %. In the aggregate, good education offered to the entire population could translate into a 1 %-per-year increase in Gross Domestic Product (GDP). The World Bank's study extrapolated that "[o]ver a 75-year horizon, a 20-year reform yields a real GDP that is 36 % higher than would be with no change in educational quality."¹⁷⁷ The link between a good education system and a country's prosperity could not be overemphasized. While there were many opinions on how to improve educational results in Haiti, there was little doubt that quality education was a key to economic growth and prosperity.

*L'Ecole de Choix in Mirebalais, Haiti*¹⁷⁸

In 2006, a group of former students from Mirebalais established the Foundation for the Technological and Economic Advancement of Mirebalais (FATEM), a tax-exempt nonprofit (501c3) organization. FATEM's mission was "to be a catalyst for sustainable change to benefit the residents of Mirebalais and surrounding areas." Its projects included the rebuilding of schools, hospitals, libraries, and infrastructure to support Mirebalais's 75,000 residents, with the aim of erecting these structures to much higher, more sustainable specifications.¹⁷⁹ FATEM established Choix in 2011 after it was determined that the most significant area of need in Mirebalais postquake was sustainable elementary education for children in conditions of extreme poverty.

Laura Pincus Hartman was the Vincent de Paul Professor of Business Ethics in DePaul University's Department of Management as well as special assistant to the president for Haiti initiatives. As part of its mission, DePaul University had long supported poverty alleviation throughout the world and had a distinct focus in Haiti; but activities increased exponentially after the 2010 earthquake. Hartman had spent a considerable amount of time in Haiti over the previous 5 years doing work for DePaul. When it appeared that Choix was becoming too large a project for FATEM to manage with all of its other activities, Hartman established the School of Choice Education Organization, an Illinois nonprofit corporation that took over management of Choix. Interestingly, the seed money for building the

¹⁷⁷Hanushek, Eric A., and Ludger Wössmann, The role of education quality in economic growth. World Bank Policy Research Working Paper 4122, February 2007, http://www-wds.worldbank.org/external/default/WDSCContentServer/IW3P/IB/2007/01/29/000016406_20070129113447/Rendered/PDF/wps4122.pdf. Accessed 31 March 2013.

¹⁷⁸Mirebalais was a rural commune in Haiti's Centre Department, located approximately 60 km (37.2 mi.) northeast of Port-au-Prince, the capital. Despite the close proximity, the drive could range from 90 min to 4 h, depending on traffic and weather.

¹⁷⁹"About FATEM," FATEM website, <http://www.fatem.org/about-fatem>. Accessed 31 March 2013.

school, which opened its doors in October 2011, came from the players of online games. Mark Pincus, Hartman's brother, was the founder of Zynga and the visionary behind Zynga.org, which provided gamers with the opportunity to buy virtual goods while playing online games such as *Farmville* and *Mafia Wars*. The proceeds from these virtual goods were contributed through Zynga.org to NGO partners such as FATEM, as well as the World Food Programme and Save the Children. Since the inception of Zynga.org in 2009, gamers had contributed more than \$10 million, \$3 million of which went to Haiti to support a variety of projects, including l'Ecole de Choix.¹⁸⁰

Hartman's vision was to build a school that provided a quality education for children living in extreme poverty – a school with a mission not only to change their lives and those of their families, but also to deliver a leadership-based education that motivated those children in turn to change the lives of their fellow Haitians. The school's curriculum was focused on developing leadership and communication skills, and with the goal of building these skills while affirming “[the students’] individual dignity through the choices they make.” See Exhibit 2 for Choix Mission and Values. The Choix education was based on the sense that education was a right, not a privilege, but one that was coupled with a “responsibility to ourselves, to our communities and to our society.”¹⁸¹ The school's founding values highlight role modeling, responsibility, inclusiveness and respectfulness, as well as fun. Initially serving prekindergarten to fourth grade students, the school was committed to following its 183 students through to the twelfth grade. As the oldest students graduated, new prekindergarten students were admitted, allowing the school to maintain six grade levels at all times and a constant student body size until funding for additional grade levels was secured.

Choix's administrators recognized that good nutrition was important in learning, and the school purchased its meals through the United Nations World Food Programme so the children could be fed while at school. An additional major aspect of the Choix strategy was the decision to employ only qualified teachers (university degree and teacher certification) and to pay them a living wage. Choix had an ambitious program to provide students with a trilingual education in Creole, French, and English. The choices that Choix had made in order to develop and launch a school with a viable chance of success in making a difference in the lives of rural youth in Haiti made Choix a promising partner for Intel's IESC program. When viewed in the context of Haiti's history and its current educational system or, more accurately, lack thereof, Choix's mission stood out as a fine-tuned effort to address directly some of the most deeply entrenched barriers to opportunity that faced children in rural Haiti in the twenty-first century.

¹⁸⁰“About Zynga's Haiti initiatives,” Zynga Inc. website, <http://www.zynga.org/initiatives/haiti.php>. Accessed 15 May 2012.

¹⁸¹“Vision and values,” L'Ecole de Choix website, <https://ecoledechoix.org/values>. Accessed 1 May 2012.

John Cartwright's Visits to Haiti's l'Ecole de Choix

In many ways, Cartwright was uniquely positioned to meet the unexpected challenges facing his IESC team upon their arrival at Choix in September 2011 to provide support for the school's launch. Cartwright grew up on a farm in California, becoming the man of the house at only 13 years old, when his father died. He and his sister helped his mother to run the farm, and Cartwright became a jack-of-all-trades. He built his own house and one for his mother in a rural area of California. He learned a lot about plumbing from his father-in-law, who ran a large plumbing business on Long Island in New York. Cartwright was humble, yet eager to share his skills. He exemplified Intel's can-do culture and spoke with pride about his experience first as a green-badge (contractor) in 1992, then a blue-badge (full-time employee) in 1997. In 2012, he was a full-time IT manager in the company's Supply Network Capability.

Cartwright's application to join the IESC team that would be deployed in fall of 2011 was inspired by his 17-year-old son, who gave up a significant amount of an earlier summer vacation volunteering at an Easter Seals camp for seriously disabled children. He was excited to be selected for his first choice, traveling to Haiti to support the installation of Intel Classmate PCs in time for the opening of Choix in October 2011. Cartwright got to know his five colleagues over the phone during their 4 weeks of preparation for the trip. They came from various parts of the United States, Costa Rica, and Ireland. All had worked in other countries, and Cartwright was the only team member who did not speak French. Cartwright eventually referred to one team member, Jean-Marie Erie, as his "adopted brother." Erie had a doctorate in materials science and engineering from the University of Florida. As part of his job at Intel Arizona, he worked on the packaging for the Atom chip, which was the microprocessor component driving the Intel Classmate PC.

Born in New York City, Erie moved to Haiti with his parents and lived there from 1982 to 1998 before returning to the United States and Canada to complete high school and university. Didier da Costa worked for Intel in Ireland, but she loved languages and was of French and Portuguese descent. Luke Filose, a former Peace Corps volunteer, had worked in 10 different African countries. Filose was brought into EMPG by Clugage in 2011 to manage the IESC program, so he was assigned to the Haiti team as a teacher trainer to get firsthand experience on the program that he later administered. Silvia Jenkins had worked for Intel in Costa Rica for 14 years, and this was to be her first trip to Haiti. Michael Wiggins had been with Intel for 3 years, and worked in human resources in Arizona, but as an international business major at the University of Illinois, he had lived in Paris and Montpellier, France. He also had experience volunteering in Mexico and in the Czech Republic.

Cartwright's preparatory work before traveling to Haiti involved testing the Waterford Early Learning software on a classroom server manufactured by Critical Links that would be used to support learning, networking, and administration. The testing was critical because this combination of hardware and software from allied vendors had not been used before. He reported having had to "beg, borrow, and steal

lab space” to perform his pretravel tests, but that was actually the easy part of the installation effort at Choix.

Cartwright carried the server into Haiti in his luggage, and his colleague Filose took nearly half a mile of Ethernet cable in two 30-lb boxes, leveraging frequent flyer status accumulated from his travels to Africa. The Intel IESC team landed in Port-au-Prince, Haiti, and was greeted by the marching band that serenaded arrivals at the earthquake-damaged airport, which was being housed in a converted warehouse. When Cartwright and his colleagues arrived in Mirebalais to begin installation and training at Choix, however, the school’s building was still under construction and there was not yet electricity. Cartwright noted, “It could only be described as a muddy mess.” The unexpected construction delay became a blessing in disguise, however, providing Cartwright with an opportunity to discover that the contractor was using the wrong kind of power supply, and that the wiring was being put in backwards. Cartwright’s experience in building his own house came in handy, and he and Erie became consultants to the local construction crew. Erie relayed Cartwright’s advice on basic wiring to the crew. The crew appeared to follow Cartwright’s suggestions, but Erie told him that they still bad-mouthed him behind his back, evincing the class struggles common in Haiti.

The four other members of the team were initially idle, since they needed power to begin training the teachers. They quickly adapted, however, and moved the teacher training to a hotel in town. Cartwright and Erie stayed on-site getting the power supply, a cooling system for the server, and then an antenna for the Internet installed during the first week. Demonstrating their can-do attitude and creativity within the cost limits of IESC deployments, Cartwright and Erie hired local workers to dig trenches and were then able to install the Internet wiring themselves. The result was a wired network installation with a total cost of \$300, far less than the \$3,000 quoted by a local vendor for this service. The job was not easy, however: Cartwright sent Choix’s principal to Haiti’s best hardware store in the capital city for a voltage regulator to protect the equipment from power surges, but the regulator the principal returned with was dead on arrival. Unfortunately, Cartwright noted, it was not rare in Haiti to discover that ostensibly new products purchased off the shelf were actually used or damaged products that had been packaged to appear new. Cartwright added, “I don’t think that [the principal] ever got his \$100 back.” Somehow, the team adapted to each challenge in its path, finding alternatives when its original plans were thwarted by unexpected developments.

While all these electrical issues were transpiring, parents kept dropping by, begging for their child’s admission to the fancy new school. It broke Cartwright’s heart when he sent them to the school principal, since he knew that all 183 students had already been selected. The policy at Choix was to have no more than 30 students in each of the six grades, to ensure that all had the best chance possible to learn. Cartwright observed, however, that the principal apparently did not do a good job of “firewalling the classroom size,” and found that he was no longer there when Cartwright traveled to Haiti for a second visit in March 2012. There was not yet security on-site, so every night Cartwright and his teammates carried the server, Classmate PCs, and other equipment (approximately 45 boxes) back to their hotel

where it would be safe. Cartwright lost 20 lb during the 2-week trip. He noted, “This is Intel; we do whatever it takes to delight our customers,” echoing the company’s mission statement to “[d]elight our customers, employees, and shareholders by relentlessly delivering the platform and technology advancements that become essential to the way we work and live.”¹⁸² To the IESC team, a customer in Mirebalais, Haiti, was just as important as a multimillion-dollar client on Wall Street in the United States. Indeed, central to the IESC philosophy was the tenet that its local education partners were not – and were not to be treated as – the recipients of charitable aid, but were Intel customers and deserving of full-service customer care.

The 2nd week of Cartwright’s initial visit was much more exciting, since the building was completed and the teachers, school administrators, and students arrived for further training in the Choix computer lab. In contrast to most schools in Haiti, where teachers had little more than a sixth grade education themselves, the teachers and administrators at Choix were highly educated and most were trilingual, speaking and teaching in English, French, and Creole. By the time the students arrived, the school was Wi-Fi enabled, and the IESC crew had provided initial training to the teachers and all 183 Choix students. The teachers were equipped with computers and had basic training on how to support the students.

The Intel team members returned to their respective home countries, but the festival and dedication ceremonies in early December were an exciting display of what was possible when talented people worked together with hopes for a better Haiti. Just a few months after the school opened, it posted YouTube videos of the fourth graders speaking English and telling the world about their hopes and dreams. Each child chimed in with his or her aspirations, “I want to be a nurse, a teacher...a doctor...a police woman...a model, an architect, an engineer, an agronomist.”¹⁸³ L’Ecole de Choix was under way.

The Postmortem and John Cartwright’s Second Trip to Haiti

The team’s postmortem report highlighted the formidable accomplishments of its 2 weeks in Haiti, including the installation of 35 Classmate PCs and eight teacher laptops, along with training for six teachers, five administrators, and 183 students. With no complaints about many unexpected challenges, it also included a number of recommendations for follow-up trips by future IESC teams, such as more training for the lab director and written policies for maintaining the equipment. In addition to further IESC deployments to bring Choix to the point of “graduating” to sustainability, the school needed more local support. Arrangements were made for getting additional direct support from Critical Links and Waterford Institute.

¹⁸²“Quality and reliability – Intel executive perspectives,” Intel Corporation website, <http://www.intel.com/content/www/us/en/quality/executive-perspectives.html>. Accessed 3 April 2013.

¹⁸³“Dreams and aspirations of our Choix Fourth Graders,” L’Ecole de Choix video, 1:02, December 16, 2011, <https://www.ecoledechoix.org/content/videos#dreams>. Accessed 31 March 2013.

The postmortem report included pictures of the students and teachers working on the new equipment, and it was clear that these students were excited about the opportunity being afforded to them at Choix. As Filose highlighted in his posttrip blog post, “In a country where less than one in three children finishes the sixth grade, Choix was an ambitious project addressing an enormous need. And the excitement was palpable. Before our classes, students wrapped around the building waiting to be admitted into the classroom, and other children and parents crowded outside the windows to catch a glimpse.”¹⁸⁴ When Filose thanked several of the Intel Learning Series alliance members who provided discounted or free software, the impressive list included BrainPOP, British Council, LEGO, PASCO, and Skoool.com, in addition to the Critical Links education appliance. The software working seamlessly on these systems was critical to the English language immersion at Choix. Filose reported that by the end of the week the young children were “rap-ping” the English alphabet.¹⁸⁵

The second trip to Choix was slated for March of 2012. Intel usually sent a completely new team of volunteers for follow-up projects to selected sites, but in the case of Choix, Cartwright was able to get his division to support him for a second trip. He actually used some of his Intel-provided sabbatical time, but his preparatory time in Oregon was fully supported by his coworkers and by Cartwright’s willingness to go the extra mile. Clugage and Filose were now wondering whether Cartwright had created an innovative model for the future, with the overlap of one team member to facilitate project continuity.

Cartwright’s second group of four teammates traveled from Amsterdam, California, Massachusetts, and New Mexico, and represented a similarly diverse global perspective. Yvonne Ntem, from Folsom, California, was born in Ghana and raised in Ivory Coast, and Nancy Bardel, a process engineer from New Mexico, was born and brought up in Port-au-Prince, Haiti. Anne Mieke Driessen traveled to Haiti from Amsterdam but did business development in education for the Benelux countries (Belgium, Netherlands, Luxemburg) and had also lived in Germany and the United Kingdom. Cartwright reported that one of the major learning experiences on these projects was that one was not only working with people from all over the world and learning to work with cultural differences but that the typical team stages of forming, storming, norming, performing, and adjourning¹⁸⁶ transpired extremely efficiently. Everyone walked away with new friendships within Intel as well as a deep sense of how privileged they were to have been members of the Intel Education Service Corps. Despite the exhausting work, they found that their participation re-energized their commitment to Intel, and often resulted in becoming engaged in additional volunteer work in education.

¹⁸⁴Filose, Luke. IESC Haiti: Intel and Zynga give kids permission to learn. Intel Corporation website, October 19, 2011, http://blogs.intel.com/learningseries/2011/10/19/iesc_haiti_intel_and_zynga_giv/. Accessed 31 March 2013.

¹⁸⁵Filose.

¹⁸⁶Tuckman, Bruce W., and Mary Ann C. Jensen. 2010. Stages of small-group development revisited. *Group Facilitation: A Research and Applications Journal* 10 (2010): 43–48.

Cartwright described the second trip as “less geeky and more student-focused.” The Critical Links server worked from October 2011 to February 2012, but the team learned during the trip preparation that it was no longer working properly. The technical tasks included resuscitating, rebuilding, and restoring the Critical Links EA100 server; reimaging the Classmate PCs; providing technical services for the teacher laptops; upgrading the wireless and wired networks, including printers and scanners; upgrading the Waterford Early Learning (WEL) software; installing eBeam interactive whiteboards; and retraining on educational software and content including Waterford, Mythware, BrainPOP, Khan Academy, LEGO, and PASCO.

Cartwright brought a server assembled from various components that he gathered through contacts at Intel. Cartwright built the system the prior month to test if Waterford’s latest software release would work on a new version of the Critical Links EA100 platform. The server he built was nearly identical to the latest EA100 with a few modifications to enhance the system performance. After validating that the new server ran better than the previous version, Cartwright packed up the server as the temporary standby for the failed Choix system and the parts needed to also upgrade the failed system. The new box became the school’s network and Waterford application server for the first week while the team repaired and then completely rebuilt the school’s EA100. The team also fixed the power supply issues that caused the server failure, replaced broken headsets and cables, and performed basic maintenance, such as cleaning out the computer closet. They extended the wireless network to the classrooms and administration building to improve connectivity for everyone. Company representatives from PASCO also joined Choix via Skype, as they wanted to share their products to support the school’s educational mission. PASCO sold digital microscopes, probes, and supporting software that could be connected to the Classmate PCs in support of life, earth, and physical sciences courses.

Most important, the IESC team spent time working in the lab with students, setting up a disciplined way for the students to come into the lab in small groups and sign in by selecting their picture on the lab’s Classmate PCs. The team saw that, since the server went down, the lab time had become unstructured and that the equipment had been not been fully utilized. With the server repaired and some new procedures put in place, each student could log in and be led directly to where he or she had been working in the previous session. Teachers were kept apprised of student work on their systems, so they knew with what skills individual students might be struggling and could provide additional help. Cartwright reported that the “change [between the first and second IESC team visits] was like night and day, and I am optimistic that the new systems (both mechanical and human) will remain in place.”¹⁸⁷

The school was only using a fraction of the computers’ capabilities, but Cartwright was excited about future possibilities. He already had ideas for how to streamline and improve the server installation process in the future to avoid some of the

¹⁸⁷ Case writer telephone interview with John Cartwright, May 17, 2012.

difficulties he had to overcome at Choix. Still, Cartwright acknowledged that he had “no perfect answer” to the question of how Choix’s server would be supported if new problems arose moving forward. Though a local IT company had committed support, its ability to support a school hours away from the capital city had proven to be limited. Ideally, Choix would eventually be able to sustain its technology without Intel’s support, but that was not the case in 2012.

Cartwright had been changed by his trips to Haiti. After spending the previous 15 years in Intel’s IT organization, he was now exploring a position with Intel’s EMPG organization to do more to help underserved children by providing them with educational opportunities they did not have. He was already making plans with his wife to perform school volunteer work in emerging markets after he retired from Intel. These plans were not immediate, though, as he had two children in college, and his third child would soon be a freshman in college. While retirement and full-time classroom volunteering might be years away, Cartwright was actively preparing for that next adventure. While on his second sabbatical at Intel during the summer of 2012, Cartwright and his family spent 6 weeks volunteering at Choix and various schools in Kenya. Cartwright was able to learn from the educational opportunities the students had at Choix and, through reengineering the application and hardware system, deliver similar reading, math, and science programs to schools in Kenya with less infrastructure than was needed at Choix. For Cartwright, this appeared to be just the beginning of delivering opportunity through education to children who had so few opportunities in their lives.

What Next for Intel’s Partnership with l’Ecole de Choix?

In 2012, Choix celebrated its first anniversary. Thanks to many supporters, including Hartman and the Intel team, it was built and sustained for its first year, but questions remained. Had the IESC Choix project achieved success in its mission? Would Choix be able to sustain its mission in the midst of the current economic climate in Haiti? Would it prove sustainable for Intel and its education partners to support technology in a rural part of Haiti?

Since its creation in 2009, IESC had proven its ability to provide a high level of service to its NGO clients and create meaningful experiences for Intel’s employee volunteers. Two major questions remained in Filose’s mind. The first concerned the sustainability of the model from an alliance and support perspective. The second involved the scalability of a skills-based volunteer program.

In the developing world, it was all too common to encounter the problem of “white elephant” projects, in which well-meaning NGOs, development agencies, and, often, corporations contributed resources to projects that were not adequately supported or properly designed from the outset. IESC pointed out that its focus on sustainability and its program pillars – including the requirement that NGOs purchase the equipment and the provision of follow-up support teams – were intended to avoid such problems.

IESC deployments were set up as “lighthouse projects,” in the sense of acting as beacons that worked to draw the attention of allied companies to the viability of integrating social responsibility and business goals in the area of education. Intel Learning Series alliance members were asked to make donations and give preferential pricing on their products and services to make them affordable to NGOs or as a promotional deal to increase visibility for its solution. For example, in 2011, LEGO Education donated 50 of its WeDo Robotics kits for deployment on IESC’s 2012 projects. These kits retailed for roughly \$240 each, making this a donation valued at \$12,000.

“Is LEGO getting its money’s worth?” Filose asked himself.¹⁸⁸ He did his utmost to promote their generosity in blogs and Twitter messages about the projects, but he worried that at some point, alliance members would want to see follow-on sales in order to continue making such donations. “One thing I’ve learned at Intel is that companies have a limited ability to sustain donations.”

Another aspect to sustainability that IESC and its NGO clients had to consider was the ability to provide technical and pedagogical support to make the projects successful over the long term. The technical skills needed to fix problems ranging from crashed servers to virus-infected PCs were not easy to find in rural parts of the developing world. While Intel’s alliance partners were typically generous with their time in supporting technical issues, there was a practical limit to what one could do from thousands of miles away. Additionally, from a pedagogical perspective, Intel fully understood the challenge placed on teachers when computers were put into their hands and the hands of their students. Filose thought about how he could better prepare IESC volunteers to train teachers during their assignments, and how intermediary check-ins through Skype, e-mail, and cell phones could help teachers during the 6–12-month gaps between IESC team visits.

With regards to Filose’s second challenge of scalability, he noted that he was currently running IESC as something of a “one-man band” (supplemented by volunteer support from IESC alumni), screening applications, interviewing candidates, and training and mentoring volunteers to prepare them for their assignments. But increasing interest from business units, which could sponsor a team-building experience for their employees at a cost of only \$15,000 to \$20,000 per team, resulted in an increasing number of projects. When Clugage began the program, IESC ran a biannual cycle of five teams per round. When Filose joined in 2011, there were six teams, and in the second half of 2012, he managed eight projects.

“I probably spend about 20 h on each project over a two-month period from the discussion of the scope of work with the NGO to the debrief after the team returns,” Filose said. The work included many activities, such as updating the volunteer application, behavioral interview guidance, and scoring rubric; creating and

¹⁸⁸Case writer telephone interview with Luke Filose, November 2, 2012. All subsequent quotations attributed to Filose, unless otherwise noted, derive from this interview.

managing interview committees; updating and delivering virtual and face-to-face training; and responding to volunteer queries from the field. "The extra 40 h from two projects may not sound like a lot over two months," Filose said, "but IESC is just part of my job." He also managed other engagements with NGOs that were not always related to IESC assignments.

Intel's employee base contributed 1.1 million volunteer hours in 2011.¹⁸⁹ IESC volunteers contributed an average of 130 h during their preparatory, deployment, and postmortem phases of the project, meaning that in 2011, the 55 IESC volunteers contributed roughly 7,150 h, or half of 1 % of Intel's total volunteer hours.

Was this the best use of a full-time Intel staff member with an MBA (like Clugage, Filose went to Berkeley)? Filose thought so. "While IESC and other skills-based volunteer programs may never scale up to the level of our other volunteerism programs, there's an incredibly powerful effect on motivating other employees at Intel." In effect, Intel leveraged IESC as a kind of "special forces" volunteering effort. In an update to employees in July 2012, Intel Director of Worldwide Sales Greg Pearson highlighted IESC as one of Intel's best and most promising initiatives. Employees returned from their assignments to blog, hold brown-bag lunches to share their stories, and convince their colleagues to apply for the program or simply volunteer in their local communities.

In 2012, IESC had also proven its ability to support larger education technology deployments managed by ministries of education, in addition to its NGO partners. These deployments were of high strategic business value to Intel because, in many countries outside of the United States, schools were equipped with technology through a centralized process controlled by the national government.

In November of 2012, the IESC experimented with a new model of support, sending teams to support Ministry of Education deployments consisting of approximately 1,000 Classmate PCs in more than 20 schools in Namibia and the Seychelles. In both cases Intel and its partners had already installed the equipment and delivered professional development training, including the Intel Teach program to teachers. At that point, IESC was then invited to visit a subset of model schools to work closely with teachers to practice their skills, develop additional techniques for employing technology in the classroom, and then share those skills with teachers from the other schools in the deployment.

Filose saw this model expanding over time, due to its ability to scale indirectly to more teachers and students than deployments focused on a single school. In addition, this model excited Intel's business development managers around the globe, who saw IESC as a way to provide extra support to their most valued customers within ministries of education.

Could Intel continue to expand this unique program given limited human resources and the challenges of bridging the gaps between the first world and the realities of countries such as Haiti?

¹⁸⁹ Intel Corporation Corporate Responsibility Report, 2010, http://csrreportbuilder.intel.com/PDFFiles/CSR_2010_Full-Report.pdf#page=58. Accessed 31 March 2013.

***Exhibit 1: Transforming Education in Rural Haiti:
Intel and L'Ecole De Choix***

IESC Projects: Countries and Clients

Country	Clients
Bangladesh	Save the Children, BRAC
Bolivia	Save the Children
Ecuador	Fundación Nobis
Egypt	CARE
Ethiopia	Worldwide Orphans Foundation
Haiti	L'Ecole de Choix
India	CARE
Kenya	Orphans Overseas, Free The Children, Rusinga Island Trust
Namibia	Ministry of Education
Rwanda	World Vision
Senegal	World Vision
Seychelles	Ministry of Education, University of Seychelles
Tanzania	World Vision
Uganda	BRAC, Maendeleo Foundation
Vietnam	Orphan Impact
Zambia	World Vision

Source: Intel Corporation.

***Exhibit 2: Transforming Education in Rural Haiti:
Intel and L'Ecole De Choix***

L'Ecole de Choix – The School of Choice
Vision and Values

Our Vision

L'Ecole de Choix is anchored by the principle that a quality education provides individuals with the fundamental tools to affirm individual dignity through the choices they make. Choice and autonomy grant us our dignity; and it is that dignity that assures each of us the very heart of our humanity, both in the way we are responsible for ourselves, as well as for the communities in which we live. It is in this way that education becomes the pathway to our humanity.

Our Values

L'Ecole de Choix is located in Haiti, managed by both a Haiti-based and U.S.-based team, with advisors representing cultures from around the world. Integrated into the

culture of Choix are those values that represent the most effective traits from all of our educational environments. These values include vital civic ideals such as leadership, responsibility, inclusivity, and respect for one another and for education as a whole.

Each Member of The Choix Community is a *Leadership Model* for each Other

As the Choix facility is designed to be a model from a physical perspective, the behavior of each individual within our community is a model for each other. We act in ways that would be acceptable if everyone in the Choix community acted in that manner. One of the tenets of the Choix facility is its mixed age, cross-program and inter-generational environment. The adults and older students shall always feel the burden of serving as a role model while the younger students shall always feel the burden of living up to high standards.

Each Member of the Choix Community is *Responsible* for Each Other

The Choix community is a model of responsibility and accountability. Since we treat others as we would have them treat us, we maintain a responsibility for our community members, we care about their well-being and trust that they shall care about us.

Choix Community Members are *Inclusive and Respectful* of Individuals and of Difference

Within our community, difference shall be celebrated as an extraordinary value, recognized for the benefit it can bring to our environment, and the breadth of learning that it represents. Individual opinions shall be sought and heard; and space for debate and challenge will be a core priority in the education process. It is the policy of l'Ecole de Choix not to discriminate against applicants, students or staff on the basis of race, color, national or ethnic origin, religion or sexual orientation.

Choix Community Members *Honor Education as a Privilege* while also Recognizing the *Responsibility* it Brings

In Haiti today, an education such as l'Ecole de Choix is unlikely for many Haitians and thus should be treated with respect, as the truly precious value that it represents. Moreover, as learning occurs, the growth in capacity for the students brings with it a growth in responsibility to use that learning to choose, to act, to make a change. With these abilities come responsibilities and Choix has significant expectations of its students.

Learning At Choix is the *Most Fun* a Kid can have with Her or His Day!

Not despite the above values, but because of them, the environment at Choix will be one where students cannot wait to arrive at school each day! It will be a place of change, of inspiration, of excitement and bewilderment, of fascination and new ideas. Learning will be an adventure that each student will take in discovering what her or his mind can do when challenged, the choices that become available to you when you dream, and the excitement in these infinite possibilities.

Choix Will Serve as a *Paradigm*

Choix is a paradigm both for the Mirebalais educational network, initially, and for educational institutions throughout the region with respect to both the quality of education it delivers as well as its strong pedagogical methods. At all levels, its quality and processes shall bolster the Vision stated above and further inspire them to be open to limitless possibilities, to follow their dreams and to become constructive, contributing citizens.

Source: "Vision and Values," L'Ecole de Choix website, <https://ecoledechoix.org/values>. Used with permission.

Transformational Gaming: Zynga's Social Strategy (A)¹⁹⁰

In January 2009, Mark Pincus, founder and CEO of Zynga Game Network, one of the world's most successful and popular social gaming companies, had lunch with his sister, Laura Hartman, DePaul University business ethics professor. Hartman described their lunch conversation as a possible tipping point of a new direction for Zynga:

Mark had reached a point in his career where he was ready...to move forward with a greater impact on the world in terms of what role Zynga would play, because Zynga was really a culmination of a lot of his business efforts. So we had lunch, and both of us brainstormed about what that could look like. Mark had been thinking about this for a long time, about what to do and how to place his social vision into practice. Our backgrounds and experiences complemented each other because I had spent years working with corporations, trying to encourage them to do something. So it came together.¹⁹¹

¹⁹⁰This case was prepared by Laura P. Hartman, Jenny Mead, Danielle Christmas and Patricia H. Werhane. Copyright©2012 University of Virginia Darden School Foundation. All rights reserved.

¹⁹¹Case writer interview with Laura Hartman, Chicago, March 19, 2010; unless otherwise indicated, all subsequent attributions derive from this interview.

Although these ideas had been germinating with Pincus for some time, his discussion with Hartman was the initial step in an effort to build a new brand of corporate social strategy. But the stakes of this social strategy, tied up as they would be in the nonprofit partners with whom Zynga wanted to develop relationships, were equally linked to the company's preexisting corporate strategy. For this young and unabashedly successful company, Pincus's proposed new social strategy would be an intentional tangent from what Zynga had done overwhelmingly well – develop highly profitable interactive social games. Pincus's challenge was to see whether he could develop similarly profitable synergies between social gaming and nonprofit partners that were making a broader social impact. Was it possible for one company to develop a strategy that would both be profitable and engender social change?

Zynga and the Revolution in Social Gaming

Mark Pincus founded Zynga¹⁹² in 2007, long after multiplayer online games had emerged in the 1980s and become mainstream through Xbox LIVE in 2002. But Zynga revolutionized social gaming. With the increasing popularity of social networking platforms such as Facebook, Myspace, Bebo, and LinkedIn, developers saw an opportunity to test a new concept. Zynga's social games allowed people to connect with their friends through an online, interactive environment without the need for consoles such as the Xbox. Players engaged in activities as diverse as harvesting crops, slicing apples, and playing poker and strategic (and virtual) "board games" and could encourage and assist friends with gaming goals by sending virtual gifts or leaving messages and by inviting nonparticipating friends to join. Although the games could be played synchronously, social games allowed for asynchronous playing in which, most of the time, games were not played in real time. The game sites did not charge a fee to play, so the games could be played continuously for no cost at all. Alternatively, players could opt to pay for items or could participate in activities that would allow them to earn points or rewards with which they could then purchase certain items.

According to Zynga's vice president of business development, Hugh de Loayza, the average players "go to spend time within social networks – and not a lot of time at that. You're going to come in for 5–10 min to see what your friends are doing, play for a few minutes, and you're off."¹⁹³

¹⁹²Pincus named the company after his late American bulldog, Zinga.

¹⁹³Chang, Victoria, and Haim Mendelson. 2010. Social games, EC39. Stanford, CA: Stanford Graduate School of Business.

Mark Pincus and Zynga's Development

After receiving his MBA from Harvard Business School, Pincus cofounded a series of Internet start-ups, including the social networking site Tribe Networks and the software service-based companies FreeLoader and SupportSoft, the first of which he sold for \$38 million in 1995 and the second of which went public in 2000. He was also an early investor in successful Web 2.0 initiatives including Napster and Facebook. When he launched Zynga in January 2007 in an old potato chip factory in San Francisco, Pincus brought his entrepreneurial interest in social networking to bear on his experiences with casual games and Facebook's flexibility and used the Facebook platform as a foundation for code. He believed someone needed to answer the question, "What am I going to do while I'm hanging out on Facebook?" Pincus developed his first Zynga game, Texas Hold 'em (later called Zynga Poker), and had 400,000 monthly active users in just 4 months, even as he refined and optimized Zynga's monetization potential.¹⁹⁴

By January 2008, Zynga had 27 employees and was known for its innovative social networking approach to classic games such as poker and Risk.¹⁹⁵ By November of the same year, the company had grown to 150 employees and had received an infusion of cash from various backers, including the venture capital firm Kleiner Perkins.

The Closing Analysis

Just as Pincus began the January 2009 dialogue with his sister, the media started a round of speculations about Zynga's worth that culminated in estimates of up to \$5 billion by July 2010.¹⁹⁶ As Mark Pincus sat in his office at the end of January, weighing his interest in a new kind of social strategy against the arguments of Zynga's studios and vice presidents, he was forced to confront the stakes of making the wisest and most effective decision for Zynga's present and future shareholders. Given the company's success, his corporate strategies had worked thus far; Pincus was tasked, then, with bringing this same wisdom to his decision about whether to expand Zynga's fulfilled mission to include a new kind of social engagement.

¹⁹⁴Chang and Mendelson.

¹⁹⁵Stone, Brad. 2008. More than games, a net to snare social networkers. *New York Times*, January 15, 2008.

¹⁹⁶Hopkins, Curt. 2010. Google's stealth investment in game Co Zynga exceeds \$100 million. *ReadWriteWeb*, July 11, 2010, http://www.readwriteweb.com/archives/googles_stealth_investment_in_game_co_zynga_exceed.php. Accessed 5 April 2011; see also, Dean Takahashi, "Could Zynga Really Be Worth \$5 Billion?," *VentureBeat*, April 6, 2010, <http://venturebeat.com/2010/04/06/could-zynga-really-be-worth-5-billion/>. Accessed 5 April 2011.

Transformational Gaming: Zynga's Social Strategy (B)

In June 2009, Mark Pincus's already highly successful company Zynga, whose employees now numbered over 700, introduced FarmVille. FarmVille would later reach 780 million users a month, posting the highest monthly active users (MAUs) in the industry.¹⁹⁷ The most popular social game in the industry with as many as 30 million players per day,¹⁹⁸ Zynga's FarmVille asked players to build virtual farms in which they planted and harvested crops, bought and tended to animals, and furnished their farms with buildings and other "decorations," such as fences and hay bales (Exhibit 1). Players invited friends to be their FarmVille neighbors through their Facebook social network accounts. Once connected, they could send gifts of animals and other items, fertilize their neighbors' crops, and support award-based farming projects through the Co-Op feature launched in April 2010. FarmVille, like all of Zynga's social games, was free, but players could spend real money in the game to buy specialty items in the market, accelerate their rates of farm growth, "level up" (access higher levels in the game), or make the game easier to play. Game developers referred to this transformation as the "monetization" of the gaming experience, in which users opted to purchase, invest, donate or otherwise convert real currency to virtual currency through the gaming platform.

Like other social games, FarmVille's most valuable segment of the market demographic included players – primarily women and older adults – disinclined to access other gaming platforms.¹⁹⁹ Pincus accounted for the market's shift in virtual gaming development strategy in this way: "Gaming is a fundamentally social experience – not a single-player experience and not a technology experience. We are bringing gaming back to its roots."²⁰⁰

When measured by user volume, Zynga was the largest social gaming company, followed by competitors Playdom and Playfish. Zynga had a diverse portfolio of games; its other top games included Mafia Wars, Zynga Poker, Café World, FrontierVille, YoVille, FishVille, and PetVille.

The Formalization of a New Social Strategy: Zynga.org

The ideas that had inspired siblings Pincus and Hartman for much of their lives, and which they had discussed during their 2009 lunch, evolved over that following year

¹⁹⁷Cashmore, Pete. 2010. FarmVille surpasses 80 million users. *Mashable Social Media*, February 20, 2010, <http://mashable.com/2010/02/20/farmville-80-million-users/>. Accessed 27 Sept 2011.

¹⁹⁸Coelln, Eric von, How farmVille broke through 30 million daily active users. *EVCin: All About the Data Around Marketing, Social Media, Games, and More* (blog), February 19, 2010, <http://www.voncoelln.com/eric/2010/02/19/how-farmville-finally-broke-through-30-million-daily-active-users/>. Accessed 4 July 2011.

¹⁹⁹Bagga, Atul. 2009. Online gaming: Takeaways from think tomorrow today conference. *ThinkEquity*, May 19, 2009.

²⁰⁰Bagga, Atul. 2009. Social games: Interview with the CEO of Zynga. *ThinkEquity*, February 24, 2009, <http://www.avalon-ventures.com/news/social-games-interview-with-the-ceo-of-zynga>. Accessed 1 July 2011.

into concrete plans regarding international partnerships: a new intracompany sector called Zynga.org. Although this project would not formally launch until fall 2009, the company had, in the spring of that year, entered into two partnerships. In May 2009, the YoVille studio of San Francisco-based Zynga had established a community partnership with the San Francisco Society for the Prevention of Cruelty to Animals (SF SPCA). The company described the partnership on its website:

Through our virtual social goods program, YoVille players can adopt a dog or cat wearing an SF SPCA vest. Every virtual adoption results in a \$2 donation to the SF SPCA nonprofit, which protects and cares for dogs and cats in need. Since launching the initiative in the spring of 2009, YoVille players have raised more than \$90,000 for the cause.²⁰¹

Although the SF SPCA partnership did not conform to Zynga.org's focus on global issues or its intention to rotate partnerships after a particular tenure, it worked well because it was a local partner. Because the YoVille studio wanted to participate in Zynga.org's core Haiti mission, which would come about later that year, without sacrificing the SF SPCA relationship, Zynga.org's directors managed the situation of studios' running multiple campaigns. They had to analyze each team and game, in terms of how they monetized and what the dollar per use was, to understand whether they could handle more than one campaign. One of the goals was to avoid donor fatigue while making sure that the different franchises²⁰² were able to handle more than one campaign.

The company's commitment to preexisting partnerships was also reflected in the Mafia Wars studio's relationship with the Huntington's Disease Society of America (HDSA). Zynga's contributions specifically focused on the HDSA's Coalition for the Cure, a research program composed of scientists from around the world who had made key discoveries surrounding Huntington's disease and who were developing therapy treatments.

Although Zynga.org grew organically over the following months to represent a particular mission and direction, these campaign partnerships – YoVille with SF SPCA and Mafia Wars with HDSA and, later, also with Fisher House, among a few others – proceeded successfully, notwithstanding the variance from Zynga.org's specific mission. These were based on preexisting plans, special circumstances, and/or unique links to franchises. Given the high value Zynga.org placed on meaningful and lasting partnerships, preexisting relationships were given precedence over mission congruence.

Zynga.org strove to proceed with the highest possible levels of integrity and knowledge and by using its partners' expertise to the fullest possible extent. Because of Hartman's established relationships with two grassroots organizations in rural Haiti, among others, the co-directors and Pincus decided to make use of these connections in focusing the nascent dot-org's efforts; a significant breadth of knowledge and

²⁰¹ "YoVille," *Zynga.org*, <http://www.zynga.org/initiatives/sfspca.php>. Accessed 1 July 2011.

²⁰² "Franchises" and "studios" both referred to those separate divisions of the company responsible for a particular game. For example, within the company, the Zynga team that developed and supported FarmVille was interchangeably referred to as "a franchise" or "a studio."

expertise about the subject matter became one of the team's core criteria for Zynga.org in choosing partners. Pincus reflected on what such a partnership might look like, given the organizations' focus on families and self-reliance, and which Zynga franchise would be most compatible with these particular organizations.

Because FarmVille represented Zynga's largest user base, it was the natural platform for Zynga.org's official launch. Although the company had engaged in community partnerships before the creation of Zynga.org, FarmVille would be the first venue in which the company considered using this emerging social strategy on a macro scale while serving Zynga.org's developing mission.

Moving Forward

The plan started to take shape. Virginia McArthur, director of operations for Zynga.org and one of Zynga's executive producers, and Hartman proposed to the FarmVille team an innovative strategy whereby the users would be offered a limited-time, special-edition item within the game: "Sweet Seeds for Haiti." Through FarmVille, Zynga would contribute 50% of all proceeds from the sale of these seeds (\$5.00, in this case) to two Haiti-based causes: Fonkoze and FATEM (a microfinance initiative and an educational and school-meals program, respectively). The studio conducted the necessary coding in-game and Zynga.org initiated its first live launch on October 1, 2009 (Exhibit 2). The campaign was met with an exceptionally positive reception among its user community and throughout the media.²⁰³

During this start-up period, the Zynga.org directors began to develop criteria that would help with the decisions they would have to make on a daily basis. These criteria addressed issues such as the organizational focus on worldwide rather than solely domestic challenges in determining which causes or recipients to support. Following the success of the original Zynga.org campaign, this had become particularly important. The success of that first campaign in October 2009 led to an influx of requests from various organizations to partner with Zynga. Having these articulated standards helped the directors with the difficult task of turning away organizations doing meaningful and urgent work and provided a satisfactory explanation for the rejected partner.

²⁰³ For examples of user and media coverage, see: Ashby, Alicia. 2009. FarmVille's sweet seeds raise \$487K for charity. *EngageDigital* (blog), October 20, 2009, <http://www.virtualgoodsnews.com/2009/10/farmvilles-sweet-seeds-raise-487k-for-charity.html> ("Zynga's Sweet Seeds for Haiti promotion in FarmVille may in fact be the single largest amount of money raised for charity through sale of specific virtual goods to date."); Takahashi, Dean. 2009. Zynga's FarmVille gamers donate to Haiti's poor via virtual goods. *VentureBeat*, October 20, 2009, <http://venturebeat.com/2009/10/20/zyngas-farmville-gamers-donate-to-haitis-poor-via-virtual-goods>; Nash, Adam. 2009. Farmville economics: Sweet seeds are almost genius....," *Psychohistory: The Personal Blog of Adam Nash* (blog), October 5, 2009, <http://blog.adamnash.com/2009/10/05/farmville-economics-sweet-seeds-are-almost-genius>; Gunnin, Lucinda, Farmville's sweet seeds for Haiti charity event underway. *Associated Content from Yahoo!*, October 8, 2009, http://www.associatedcontent.com/article/2262915/farmvilles_sweet_seeds_for_haiti_charity.html. Accessed 4 July 2011.

Zynga.org made a deliberate choice to differentiate itself as a separate unit within Zynga, rather than as staff within each studio, in order to maintain sustainability and to reinforce its core mission. The company needed strong metrics to prove that its dot-org partnerships and campaigns were truly successful.

The metric assessment, accompanied by other nuances of implementation and back-end evaluation, were at the center of McArthur's position as operations director. Hartman's role, as the director of external partnerships, was to establish a rigorous vetting process in connection with due diligence to manage these newly formed relationships and to participate on the ground once the projects were in the implementation phase so as to ensure that the ultimate recipients received a true benefit. It was crucial to identify partners who, by virtue of size, could accommodate this kind of field-level participation and assessment. Given Zynga's mission of "connecting the world through games," it became vital that Zynga.org's organizational partners and all resulting campaigns would have a significant impact on fund recipients.

As Zynga.org evolved and focused on its own sustainability, the directors continued to refine these core criteria – to focus interests and efforts – and to articulate more-specific criteria for potential partners. With its scale and its ability to provide users a pipeline to the concrete use of funds raised (e.g., soon after the first launch, FarmVille players could access periodic updates about the application of funding), Zynga.org could focus on its chosen values: children, families, and education.

As Hartman dealt with the external criteria for the selection and validation of partners, McArthur had to negotiate reasonable internal expectations in the selection of franchise partners. With more than 20 game studios active at various times, Zynga ran games that ranged from those in beta mode, to just-launched games that were struggling to go viral, all the way to the industry giant FarmVille, which had almost 60 million MAUs in July 2010.²⁰⁴ When assessing how and when to introduce a possible Zynga.org campaign, McArthur noted that the key question for a potential Zynga franchise partner was whether the partner had enough resources within its game to support it. Together, the directors established a benchmark of games with one million daily active users for the introduction of a Zynga.org campaign; this threshold limited the base of potential Zynga.org franchise partners to FarmVille, YoVille, FrontierVille, Mafia Wars, FishVille, PetVille, Zynga Poker, and Café World.

The relationships between franchises and their potential partners developed organically from the implementation of these criteria. For example, following the success of Zynga.org's Sweet Seeds campaign, Pincus forwarded an e-mail to the co-directors introducing Water.org, a nonprofit committed to providing clean drinking water to developing countries, which seemed precisely appropriate for the FishVille studio. Water.org presented as a potential partner organization that allowed for manageable scale, proved thematically relevant to the franchise, and was salable to the user from an operational and content-based perspective. Moreover, the

²⁰⁴ "App Leaderboard. 2010. AppData: Independent accurate application metrics and trends from inside network, July 31, 2010, http://www.appdata.com/leaderboard/apps?metric_select=mau. Accessed 6 July 2011.

compatibility of the Water.org partnership with the preestablished Haiti partnership supported Zynga.org's evolving goal of making the biggest impact possible by establishing a centralized theme and centralized effort. Its mission was fulfilled, at least in part, by the fact that a user of both FarmVille²⁰⁵ and FishVille could, by connecting these efforts, be sufficiently confident to contribute in both games with this increased impact in mind.

Expectations

Bim Majekodunmi, producer of FarmVille, joined Zynga in September 2009, less than a month before Zynga.org's first in-game launch. The expectation that Majekodunmi join that studio, maintain its success, and simultaneously sort out the orientation of the Zynga.org project in the studio's roadmap, raised an important challenge in this synergy: There had been no question that Zynga's exponential growth imposed a continuous challenge for both existing staff as well as for new employees to adapt quickly. By integrating the Zynga.org social strategy into the company's mission, Pincus risked distracting these employees from the already arduous and high-stakes task of learning and implementing Zynga's standards for success. In his first week, Majekodunmi had to incorporate the first Zynga.org campaign, Sweet Seeds, into Farmville. Barely knowing his colleagues and under time pressure, Majekodunmi said, made it difficult to get this Zynga.org campaign going online.²⁰⁶

Even Pincus wondered whether the Zynga.org strategy would be successful in the long run because of the question of economic sustainability from the studios' perspectives. If any venture, such as a studio, would be measured based on traditional bottom-line metrics, Zynga would have to consider the impact of a Zynga.org campaign on those metrics. Pincus was concerned not only about questions surrounding motivation, but also about the perspective of Zynga's leadership, which was responsible for setting company-wide, rather than studio-level, goals. Several of Zynga's vice presidents and managers were skeptical of the Zynga.org concept, fearing that it would not be sustainable and could possibly cannibalize other revenue. In general, however, the various teams' genuine excitement about the project mitigated any potential conflict or disorientation.

²⁰⁵FarmVille was the franchise partner for FATEM and Fonkoze during the fall 2009 Zynga.org campaigns, Sweet Seeds for Haiti I and II. For more information, see Zynga.org, <http://www.zynga.org>. Accessed 6 July .

²⁰⁶Like other social games, FarmVille was played in real time, allowing online users to sign in at their convenience and, through personal avatars, work on their unique simulated farms. Because the game was always available, studios had to "go live" with new features and market items without a lapse in availability. This raised the stakes for Majekodunmi's understanding FarmVille's culture in order to introduce a game-appropriate item the first time around that would launch the brand-new company-wide social strategy.

Implementation

With Zynga.org and its specific focus on implementing social changes through the sale of virtual social goods established, the social vision that Pincus and Hartman had discussed over lunch in January 2009 was on its way to becoming reality. It was time for implementation, and projects in earthquake-torn Haiti would be Zynga.org's first venture.

FATEM and Fonkoze: The Partners and Their Context

Haiti in brief: politics, economics, and demographics²⁰⁷

As a nation born of African slave revolt and the poorest country in the Western hemisphere, Haiti shared the island of Hispaniola with the Dominican Republic and had a dynamic political, demographic, and economic narrative (Exhibit 3). The former Saint Domingue had seen political upheaval since its founding in 1659.²⁰⁸ The 20th century presented a series of challenges for the country. From 1915 to 1934, the United States occupied Haiti in an effort to manage civil unrest. The U.S. presence was not universally welcomed. It was during this time that the United States also played a role in dismantling the constitutional administration, which caused conflict with the Dominican Republic. From 1934 to 1956, a territory dispute with the Dominican Republic led to the Parsley Massacre of 20,000 Haitian laborers stationed in the country. In 1957, the newly elected Dr. Francois Duvalier initiated the hereditary dictatorship that kept him and his son in office until Jean-Claude Duvalier, or “Bebe Doc’s,” overthrow and the adoption of a new constitution in 1986. The 1990 election of former priest Jean-Bertrand Aristide launched a new use of paramilitaries, which was followed by the election of his former Prime Minister, Rene Preval. In 2000, Aristide returned amid new claims of human rights abuses.

After four hurricanes near the end of the first decade of the twenty-first century, followed closely by one of the strongest earthquakes to hit the area in the past 200 years, in 2010, Haiti found itself struggling for a future. Eighty percent of its population lived below the poverty line. And although economic investment had begun to return after the U.S. Congress passed the Haitian Hemispheric Opportunity through Partnership Encouragement (HOPE) Act, which allowed for some U.S. free trade, insecurity prevailed. In late 2010, the Haitian government was sustained by pledges of international assistance that would be slow to materialize.²⁰⁹

²⁰⁷ Charles Arthur, *Haiti in Focus*, Interlink Publishing Group, January 18, 2002. This guide, in conjunction with the CIA's biweekly updated *2010 World Factbook*, is the source of the information contained in this section.

²⁰⁸ The Spanish, under Christopher Columbus, had taken control of the island from its natives in 1492 and their rule lasted until the French took over in 1659.

²⁰⁹ Johns, Joe, and Maryanne Fox. 2010. Most countries fail to deliver on Haiti aid pledges. *CNN World*, July 15, 2010, <http://www.cnn.com/2010/WORLD/americas/07/15/haiti.donations/index.html>; 2010 *World Factbook*, CIA, <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>. Accessed 30 July 2011.

Haiti's national demographic complicated its portrait. The population was concentrated in urban and coastal areas, particularly in the capital of Port-au-Prince, where Haiti's principal industry – agriculture – was not truly viable, which contributed to the dismal per-capita income and to the unsafe and unsanitary conditions that resulted from its geographical concentrations. Haiti's immense deforestation, brought on by logging operations and unsound agricultural practices, among other things, was a severe problem affecting land productivity and infrastructure, and fuel sources.

Zynga.org's Inaugural Partners

Zynga's Haiti partnerships soon became the cornerstone of Zynga.org's implementation. The first Zynga.org campaign launched on October 1, 2009, within the FarmVille game and offered players sweet potato seeds that did not wither in exchange for the equivalent payment of \$5.00. Half of all proceeds from the "Sweet Seeds for Haiti" campaign went to two partner organizations: FATEM and Fonkoze. A second Sweet Seeds campaign ran in November, benefiting these same organizations.

FATEM

In April 2006, a group of Mirebalais, Haiti, expats, living in Boston, developed a plan for an organization that would give back to the community that nurtured them. FATEM was organized to be a catalyst for long-lasting positive change in the Mirebalais community by providing educational opportunities, technology training, and strengthening the community's capacity to improve its social, economic, and environmental conditions (Exhibit 4). Once the group formalized the organization's structure, the members articulated their vision:

We have always envisioned a region where all residents will be gainfully employed, and where children have access to quality education that allows them to compete on a global scale, made possible in part by the power of the Internet.²¹⁰

To this end, FATEM's central project in 2010 was its partnership with Zynga in the creation of a K–12 educational institution with a focus on quality education, income generation, and financial literacy. FATEM's leadership wanted this community center to serve as a model for its own educational network of schools, as well as for other educational institutions throughout the region.

[This community] is in dire need of a K–12 school that can be used as a reference...to raise the standard in local education. In addition to the usual 14 classrooms, the school shall have a well-equipped technology and computer room/language lab, necessary teaching tools and supplies, and, most importantly, a safe and comfortable environment that [facilitates] learning. Part of our budget will support...the salaries of trained teachers who can stimulate the children's appetite for learning and make it fun for them.²¹¹

²¹⁰Hartman, Laura. "FATEM: Vision and mission statement," e-mail to the case writer, May 28, 2010.

²¹¹FATEM: Vision and Mission Statement.

Starting with the May 2010 Sweet Seeds Zynga.org campaign, all campaign moneys raised went entirely toward the construction of FATEM's K-12 school, *L'École de Choix*, or the School of Choice (Exhibit 5).²¹² (For a video of this evolution and the resulting project, please see <http://www.youtube.com/watch?v=9qejsWvLAK>.)

Fonkoze

In 1994, a cohort of 32 Haitian community leaders responded to Haiti's challenging economic circumstances with a plan. Fonkoze founder Father Joseph Philippe was concerned that "although a majority of poor people in Haiti knew how to organize themselves politically, they knew nothing about how to organize themselves economically."²¹³ These leaders answered this need by designing a bank built by and for Haitians living in conditions of extreme poverty. Not only was the organization one of the few truly grassroots microfinance institutions in Haiti, but it was also Haiti's largest with more than 40 branches covering every region of the country. As a part of Philippe's vision "to provide the means for all Haitians, even the poorest, to participate in the economic development of the country," Fonkoze established its target group as women, because "women are the backbone of the Haitian economy and the doorway into the family unit."²¹⁴

When former Washington, DC, management consultant Anne Hastings decided to join Philippe in Fonkoze's formation, she was promptly named director and, as the head of the bank's nationwide community network, oversaw an exponential expansion of the bank's accessibility and client base. By July 2010, Fonkoze would be serving more than 45,000 women borrowers, most of whom lived and worked in the countryside of Haiti, and more than 200,000 savers. Fonkoze's primary function had been to organize solidarity groups, small groups of women who, through shared mentorship and oversight, pursued literacy, health care, and business skills as they worked with Fonkoze to apply for small to medium-size loans. As the bank continued to grow its membership and measure its long-term impact (Exhibit 6), it began offering to borrowers additional services including currency exchange; money transfers, or remittance services; literacy, business skills, women's health, children's rights, and environmental protection education; and life and credit microinsurance.

One of its most successful programs, and a tie-in to the virtual livestock available in FarmVille, was its *Chemen Lavi Miyò* (CLM), in Haitian Creole, the Road to a

²¹²Zynga.org, "Sweet seeds for Haiti campaigns," <http://zynga.org/initiatives/sweet-seeds.php>. Accessed 4 July 2011.

²¹³Fonkoze, "Who we are: Our history; the context," <http://www.fonkoze.org/aboutfonkoze/whoweare/ourhistory.html>. Accessed 30 July 2011.

²¹⁴Fonkoze. 2010. A bank the poor can call their own: A history of Fonkoze – Haiti's alternative bank for the organized poor. www.fonkoze.org/docs/fonkoze_history.pdf. Accessed 31 July 2010.

Better Life. This introductory-level individual development program was designed to meet the most vital needs of those living at the lowest levels of poverty in Haiti:

It accompanies them with training, one-on-one supervision and encouragement, confidence building, and other services like health care and home repair. It protects clients as they move forward along a two-year road from abject misery until they have their own functioning microenterprise and are ready to enter a microfinance program.²¹⁵

The first step of CLM involved the delivery of an asset to the participant: a chicken (an egg-layer), a goat (a milk-producer), or a small amount of funds, depending on a discussion with the participant and her capacity at the time she entered the program. From there, the Haitian and her family would begin to build their future.

After successful autumn campaigns with its two inaugural partners, Zynga.org expanded its reach, with the United Nations World Food Programme (WFP), through a cross-game holiday promotion that established a foundation for what had become one of Zynga.org's most enduring relationships. With seven separate campaigns leading up to a comprehensive launch in October 2010 in honor of World Food Day, Zynga players had been able to make a significant contribution through micropayments to the WFP's private-donor strategy.

Other partners since Zynga.org's inception have included Fisher House (helping military families), the National Audubon Society (for Gulf Coast clean-up efforts), and Water.org (in connection with water, health, and sanitation in Haiti).

The Original 50/50 Profitable Partnership Model

At Zynga.org's inception, McArthur and Hartman had to determine how to apportion funds raised through its campaigns. What should be the percentage split between the recipient organization and the partnering studio? After much consideration by the Zynga.org co-directors, and after evaluating alternative models of corporate giving, the company originally settled on a 50-50 split. That gave the model more of a partnership feel and seemed sustainable in the business. Although they later opted to go well beyond, it was this critical balance that the co-directors sought to be both intraorganizationally justifiable as well as externally market-sustainable.

The co-directors examined a variety of corporate-social-strategy models in connection with many widely known corporate humanitarian campaigns. For instance, some corporations maintained completely separate foundations for their giving operations, such as Salesforce.org and Google.org. Other corporations partnered with the (RED) initiative, a network organized for the purpose of eliminating AIDS in Africa (Exhibit 7). According to the (RED) fact sheet:

(RED) works with the world's best brands to make unique (PRODUCT) RED-branded products and direct up to 50% of their gross profits to the Global Fund to invest in African

²¹⁵Fonkoze, "Who we are: How Fonkoze works; Fonkoze's fight against poverty," <http://www.fonkoze.org/aboutfonkoze/whoware/howworks.html>. Accessed 31 July 2010.

AIDS programs. (RED) is not a charity or “campaign.” It is an economic initiative that aims to deliver a sustainable flow of private sector money to the Global Fund.²¹⁶

The variability in corporate-giving models had led to confusion over Zynga.org’s 50-50 strategy, particularly following its campaign to raise funds immediately following the January 2010 earthquake. In an effort to provide disaster relief as quickly and as significantly as possible to those in desperate need, and because Zynga was already on the ground in Haiti, the firm decided to temporarily offer 100 % of all proceeds from a brief five-day launch for that singular purpose. But this slight detour, although well intended, led to misunderstandings.

In an attempt to place Zynga within the matrix of corporate contributions, Brazilian newspaper *Folha* published a chart comparing Zynga.org’s percentage of giving with other high-visibility corporations with long-term humanitarian campaigns.²¹⁷ The chart, entitled “How Companies Pledged in Relation to Sales of Products Linked to Humanitarian Campaigns,” clearly demonstrated that Zynga had far surpassed all the others examined, other than McDonald’s, which it met at 100 %. Other corporations considered included Dell, Motorola, Starbucks, Gap, and Apple.

In another turn of events, for its September 2010 Sweet Seeds campaign to fully fund L’École de Choix, the school it was supporting in Mirebalais, Zynga shifted back to the 100 % contribution level and also reported 100 % contributions by Facebook from its Credits receipts.²¹⁸

Zynga.org and its Sweet Seeds partners had expressed satisfaction with the clear and mutually beneficial terms of their partnerships, and the company had turned over funds raised to the organizations quickly after they had been contributed. This was as much a sign of Zynga.org’s growing efficiency as it was an extension of its commitment to produce immediate and concrete impact with and for its user base and ultimate recipients.

Monetization and Reputation Management

In addition to monetizing through direct payment for in-game virtual goods and virtual social goods, Zynga and other social-gaming companies had used lead-generation offers, allowing users to sign up online for deals, such as text-message subscriptions or video rentals, in exchange for game credits. Players who were not able to or preferred not to spend money on the site for Zynga “cash” had the option of responding to these offers instead, and these lead-generating transactions then

²¹⁶ (RED), “What is (RED)?,” [http://www.joinred.com/pdfs/\(RED\)%20Fact%20Sheet.pdf](http://www.joinred.com/pdfs/(RED)%20Fact%20Sheet.pdf). Accessed 4 July 2011.

²¹⁷ Kanno, Mauricio. 2010. Doações Não Devem Depender de Lucros, diz Especialista Sobre ‘FarmVille,’ *Folha Online*, March 24, 2010, <http://www1.folha.uol.com.br/folha/informatica/ult124u711295.shtml>. Accessed 4 July 2011.

²¹⁸ These “credits” were a virtual currency that the site’s visitors could use to purchase – via credit card and PayPal, among others – “virtual” goods offered in any of the games or applications.

monetized players who might otherwise not have provided revenue in the traditional pay-to-play model. This form of monetization came under scrutiny in fall 2009, only a few weeks after the October 1 launch of Zynga.org's Sweet Seeds campaign, when Michael Arrington published a scathing critique in *TechCrunch* of Zynga's lead-generation practices in the much-discussed article, "Scamville: The Social Gaming Ecosystem of Hell."²¹⁹ While lead-generation offers generally were considered relatively benign, Arrington accused Zynga of accruing as much as one-third of its income, with the tacit support of Facebook, by knowingly working with scam advertisers who would place deceptive offers. Arrington claimed that the offers would manipulate users into downloading software and accepting pricey, recurring mobile subscriptions, both of which were constructed in a way that prevented the average user from easily removing them.

As critics and users joined in the challenge, Zynga had a quick turnaround time on its reply; Pincus responded by immediately announcing in his November 2, 2009, blog post that the company would remove from the site all mobile offers of any kind, that it had already terminated its relationship with its principal cell-phone-subscription offer provider, and that it planned to screen all lead-generation offers moving forward before placing any new ones on the site.²²⁰ Arrington was not satisfied, though, and on November 6, 2009, he answered Pincus:

Zynga CEO Mark Pincus said earlier this week that he intends to make sure his company's games don't include scammy offers in the future...But what he didn't say in that blog post is that Zynga has been scamming users from the beginning quite intentionally as part of their revenue model.²²¹

Arrington was armed with Pincus's own words; he linked his article to a video of the CEO speaking at a Startup@Berkeley bar mixer in which Pincus explained his early strategy, saying he "funded [Zynga] myself but did every horrible thing in the book...just to get revenues right away...We did anything possible just to get revenues so that we could grow and be a real business."²²² Pincus was perfectly willing to eat his words. "I didn't mean to be so crass," he said, sighing. "But I was talking in a bar." He later clarified, "I respect companies that build a service that can scale and make a lot of money."²²³

²¹⁹ Arrington, Michael. Scamville: The social gaming ecosystem of hell. *TechCrunch*, October 31, 2009, <http://techcrunch.com/2009/10/31/scamville-the-social-gaming-ecosystem-of-hell/>. Accessed 9 Nov 2010.

²²⁰ Pincus, Mark. My take on Zynga and CPA offers. *Markpincus.com* (blog), November 2, 2009, <http://markpincus.typepad.com/markpincus/2009/11/my-take-on-zynga-and-cpa-offers.html>. Accessed 9 Nov 2010.

²²¹ Arrington, Michael. Zynga CEO Mark Pincus: 'I Did Every Horrible Thing in the Book Just to Get Revenues'. *TechCrunch*, November 6, 2009, <http://techcrunch.com/2009/11/06/zynga-scamville-mark-pinkus-faceboo/>. Accessed 9 Nov 2010.

²²² "Zynga CEO Mark Pincus: 'I Did Every Horrible Thing in the Book Just to Get Revenues.'"

²²³ Hendrickson, Matt. 2010. Why you should love the most hated man on facebook. *Details*, May 2010, <http://www.details.com/style-advice/tech-and-design/201005/mark-pincus-facebook-mafia-wars-farmville-zynga>. Accessed 9 Nov 2010.

Under separate circumstances, and long after Arrington's articles and the revival of the Berkeley video, the company's relationship with its principal platform, Facebook, became strained. Facebook suspended Zynga's brand-new game, FishVille, for a few days on claims of advertising violations.²²⁴ Facebook explained that its decision was unrelated to Arrington's article; and all seemed to have been settled since the two companies announced a five-year deal to work together.²²⁵ Social-gaming insiders noted that each organization faced significant challenges at the time; Facebook was confronted by claims of privacy violations, while both Zynga and Facebook were subject to several lawsuits specifically related to the issues of online offers, later dropped entirely.²²⁶

In February 2010, Pincus was interviewed by CNN and "acknowledged not being vigilant enough with the automated ads that appeared on Zynga games during the company's early days."²²⁷ Pincus explained, "[w]e were playing Whack-A-Mole. Every time we found one of these or got a complaint, we would take them down. Eventually...we realized we had to take a much more aggressive stance than a normal website."²²⁸ While the simultaneity of the Zynga.org launch with the "Scamville" crisis posed strategic challenges during the start of a new and developing social strategy, the overlap was absent from media analyses of the company through November and December 2009. More specifically, as a part of its public relations strategy, the company chose not to capitalize on the Zynga.org venture in support of reputation management.

The special nature of Zynga's social strategy forced Pincus, Hartman, and McArthur to consider shareholder accountability, producing measurable benefits in exchange for those resources directed toward extra-corporate purposes. Their decision to avoid engaging Zynga.org during the time when Zynga was taking the greatest public heat over the Scamville article was not necessarily a black-and-white one. Later, Pincus questioned whether avoiding publicity at that time had been the best strategy.

²²⁴ Arrington, Michael. 2009. Zynga's FishVille sleeps with the fishes for Ad violations. *TechCrunch*, November 8, 2009, <http://techcrunch.com/2009/11/08/zyngas-fishville-swims-with-the-fishes-for-ad-violations/>. Accessed 9 Nov 2010.

²²⁵ Holly Sanders Ware, "Facebook, Zynga Bury the Hatchet," *New York Post*, May 19, 2010, http://www.nypost.com/p/news/business/facebook_zynga_bury_the_hatchet_7c40mXaPBzAnkJTepwohlN. Accessed 9 Nov 2010.

²²⁶ Swartz, Jon. 2009. Lawsuit says Ads in social games are scamming players. *USA TODAY*, December 7, 2009, http://www.usatoday.com/money/industries/technology/2009-12-07-games07_ST_N.htm; Ryan Tate, "Facebook Named in Federal Class-Action Suit over Scammy Zynga Ads," *Gawker*, November 19, 2009, <http://gawker.com/5408472/facebook-named-in-federal-class-action-suit-over-scammy-zynga-ads>. Accessed 9 Nov 2010.

²²⁷ Gross, Doug. The facebook games that millions love (and hate). *CNN Tech*, February 23, 2010, <http://www.cnn.com/2010/TECH/02/23/facebook.games/?hpt=Sbin>. Accessed 9 Nov 2010.

²²⁸ Gross.

In January 2010, Pincus was voted Crunchies CEO of the Year by a group of Silicon Valley's most influential blogs.²²⁹ As a part of his acceptance speech, Pincus said of Zynga.org's most recent fundraising campaign, "It opened my eyes to the potential of social gaming and how we'll see virtual goods raise amazing amounts of money for great causes in a scalable way."²³⁰ As he further invested Zynga's resources into its evolving social strategy, the company's growth and reputation set up the firm for the possibility of increasing media attention. Pincus would have to determine whether and how Zynga.org could intervene in the media discourse before future assaults and how the project might contribute to the most effective PR strategy once Scamville-like campaigns had already happened.

Exhibit 1: Transformational Gaming: Zynga's Social Strategy (B)

Zynga's FarmVille



Source: Laura P. Hartman. Used with permission.

²²⁹“Every year, Silicon Valley’s biggest blogs (including us) put together the Crunchies, an event where the tech community puts the spotlight on the best entrepreneurs, startups, and investors.” Kim-Mai Cutler, “Crunchies: Zynga’s Mark Pincus Sees a Future for Socially Conscious Virtual Goods,” *SocialBeat*, January 8, 2010, <http://social.venturebeat.com/2010/01/08/zynga-social-virtual-goods/>. Accessed 9 Nov 2010.

²³⁰Cutler.

Exhibit 2: Transformational Gaming: Zynga’s Social Strategy (B)

Sweet Seeds for Haiti



Source: Zynga. Used with permission.

Exhibit 3: Transformational Gaming: Zynga’s Social Strategy (B)

Map of Haiti



Source: 2010 World Factbook, CIA, <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>. Accessed 1 July 2011.

Exhibit 4: Transformational Gaming: Zynga's Social Strategy (B)

FATEM'S Projects **Past Projects**

Month	Project
October 2006	Contributed to the purchase of 15 street lamps for the city of Mirebalais
June 2007	Donated 20 pairs of shoes to ASM, the local soccer team
October 2007	Distributed 5,000 notebooks and other school supplies to rural school children; through the Learn to Read and Write program, provided 140 children (Haitian gourdes) HTG1,250 as tuition assistance ²³¹
October 2007	Inaugurated a Mirebalais weekly radio show about citizen rights and responsibilities
April 2008	Collaborated with ASTAM (Association des Techniciens pour l'Avancement de Mirebalais) to install new and improved street signs throughout the city and facilitate traffic
July 2008	Joined forces with OPAJEC (Organisation des Paysans et des Jeunes du Centre) to build a small computer lab for students and professionals to conduct research
August 2008	Supported an initiative to train 185 agricultural, community health, veterinary, and construction technicians/agents to serve the needs of the region in multiple domains
August 2008	Supported REFAM (Rezo Fanm Mibalè) in its exposition of woman-made products and its mission to encourage and foster the development of area women

Source: FATEM, "Programs and Projects," <http://www.fatem.org/programs-and-projects> (accessed October 22, 2011).

Future Projects

- Help build or renovate all rural community schools within our network
- Implement cybercafés/computer labs in each of the four communal sections (districts) of Mirebalais.
- Initiate efforts to integrate computer literacy in primary and secondary school curricula throughout the region.
- Hold regular computer literacy seminars for "IT Teachers," selected from all primary and secondary schools in the Mirebalais area.
- In collaboration with local residents, implement agricultural and farming projects designed to help more parents become self-sufficient by boosting their income so they can afford to support their children's education.

Source: Laura Hartman, "FATEM: Vision and Mission Statement," e-mail to the case writer, May 28, 2010.

²³¹ The exchange rate on June 2, 2010, was HTG39.5030 to (U.S. dollars) USD1.00.

Exhibit 5: Transformational Gaming: Zynga's Social Strategy (B)

L'École de Choix, Mirebalais, Haiti

EDUCATION => AUTONOMY => CHOICE => DIGNITY => HUMANITY

Executive Summary

FATEM, Mirebalais's community organization, along with local representatives, global NGOs and others, have broken ground on an extraordinary K–12 school and community center, intended from its inception to meet the most pressing and critical needs of those living in extreme poverty in Haiti, with a focus on quality education, income generation and financial literacy.

Key Distinctions

Our Educational Program Seeks To Prepare Students To Be Socially Responsible Leaders For Tomorrow.

K–12 academic track had an emphasis on language proficiency in English, French and Creole in all grades, technology instruction, teacher training and curriculum coordination (partners Nova Southeastern University, DePaul University and Francis W. Parker School).

Our After-School Programs Provide A Holistic Response To Community Needs.

"Plas ti Moun"-style youth center with a focus on psycho-social development, including education surrounding the arts, culture, handicrafts, new technologies, athletics, academic support services, and preventative health care education. English-as-a-second-language, literacy, financial literacy, as well as work skills training programs for adolescents and adults.

The after-hours program "works" for Mirebalais! We are partnering with Global sourcing firm Samasource, which will provide micro-technology jobs to workers within the facility during the 11:00 p.m.–7:00 a.m. shift.

Our Construction Plans Create Long-Term Jobs And Will Be Locally Responsible.

Sourcing decisions for school construction will intentionally strive to support and even help to create new jobs in the local community through long-term renewable contracts for those supplies that will need to be purchased on a continual basis. Sourcing priorities will be sustainable, ecologically responsible, responsive to the environment for natural cooling and shade, and designed to be hurricane- and earthquake-resistant.

We Are Working In Solidarity With Our Community.

The local community is a full partner in the construction, creation and development of L'École de Choix.

The land was contributed by the municipality for the construction and local leaders, including Mirebalais Mayor Lochard Laguerre, the Prefect of Bayasse

(its precise location) and the Senator of the Central Plateau Edmonde Supplice Beauzile, are involved in the process.

L'École de Choix Represents A Multi-Faceted Partnership.

Additional partners include World Food Programme and Haiti's prestigious Bureau de Nutrition et Développement in connection with the school meals program, and Water.org with regard to the water management.

L'École de Choix was designed from its inception to serve as a *replicable* paradigm of public-private partnerships, established to serve its (broadly construed) community with educational and economic resources.

Our Vision

L'École de Choix is anchored by the principle that a quality education provides individuals with the fundamental tools to affirm individual dignity through the choices they make. Choice and autonomy grant us our dignity; and it is that dignity that assures each of us the very heart of our humanity, both in the way we are responsible for ourselves, as well as for the communities in which we live. It is in this way that education becomes the pathway to our humanity.

Our Values

Each Member of the Choix Community is a *Leadership Model* for each other

As the Choix facility is designed to be a model from a physical perspective, the behavior of each individual within our community is a model for each other. We act in ways that would be acceptable if everyone in the Choix community acted in that manner. One of the tenets of the Choix facility is its mixed age, cross-program and inter-generational environment. The adults and older students shall always feel the burden of serving as a role model while the younger students shall always feel the burden of living up to high standards.

Each Member of the Choix Community is *Responsible* for each other

The Choix community is a model of responsibility and accountability. Since we treat others as we would have them treat us, we maintain a responsibility for our community members, we care about their well-being and trust that they shall care about us.

Choix Community Members are *Inclusive And Respectful* of Individuals and of Difference

Within our community, difference shall be celebrated as an extraordinary value, recognized for the benefit it can bring to our environment, and the breadth of learning that it represents. Individual opinions shall be sought and heard; and space for debate and challenge will be a core priority in the education process. It is the policy of L'École de Choix not to discriminate against applicants, students or staff on the basis of race, color, national or ethnic origin, religion or sexual orientation.

Choix Community Members *Honor Education* as a Privilege while also Recognizing the *Responsibility* it Brings

In Haiti today, an education such as L'École de Choix is unlikely for many Haitians and thus should be treated with respect, as the truly precious value that it represents. Moreover, as learning occurs, the growth in capacity for the students brings with it a growth in responsibility to use that learning to choose, to act, to make a change. With these abilities come responsibilities and Choix has significant expectations of its students.

Learning at Choix is the *Most Fun* a Kid Can have with Her or His Day!

Not despite the above values, but because of them, the environment at Choix will be one where students cannot wait to arrive at school each day! It will be a place of change, of inspiration, of excitement and bewilderment, of fascination and new ideas. Learning will be an adventure that each student will take in discovering what her or his mind can do when challenged, the choices that become available to you when you dream, and the excitement in these infinite possibilities.

Choix Will Serve As A *Reference* for both the FATEM educational network, initially, and for educational institutions throughout the region with respect to both the quality of education it delivers as well as its strong pedagogical methods. At all levels, its quality and processes shall bolster the Vision stated above and further inspire them to be open to limitless possibilities, to follow their dreams and to become constructive, contributing citizens.

Sources: Jacky Poteau and Laura Hartman, "L'École de Choix, Mirebalais, Haiti," July 2010, <http://wiki.squeakland.org/download/attachments/2097378/Ecole+de+Choix+Brochure+v5.pdf?version=1&modificationDate=1286757283000>; L'École de Choix, "Key Distinctions" and "Vision and Values," <http://www.ecoledechoix.org/> (accessed February 7, 2012) Used with permission.

Exhibit 6: Transformational Gaming: Zynga's Social Strategy (B)

Fonkoze's Key Statistics²³²

Key indicators as of Dec 31, 2009

	Fonkoze financial services	Fonkoze: the foundation	Consolidated
Number of branches	24	17	41
Portfolio outstanding	\$7,099,297	\$1,607,651	\$8,706,948
Percent female (solidarity loans)	100 %	98 %	99 %
Number of active loan clients	32,409	12,935	45,344
Savings balance	\$11,028,456	\$3,320,731	\$14,349,188
Number of savings accounts	143,121	55,619	198,740

Key Literacy Indicators

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Clients completing basic literacy training	1,904	1,075	2,219	2,332	3,610	3,586	4,278	13,345	11,003
Clients completing business skills training	458	616	1,040	1,167	3,138	3,764	1,898	7,590	8,665
Clients completing health training						219	954	3,450	1,949

Progress since Inception

	Number of depositors	Total value of deposits	Number of loan clients	Value of loans outstanding	Number of branch offices	Number of employees
1996	193	1,175,801	110	348,515	1	9
1997	3,444	3,273,342	1,542	5,158,185	11	52
1998	5,134	9,878,735	2,607	7,038,578	15	101
1999	7,900	18,820,335	2,834	10,235,763	15	118
2000	13,260	38,646,349	4,794	21,135,636	16	130
2001	20,854	66,923,566	8,416	23,614,213	18	170
2002	32,000	115,228,058	10,000	42,397,213	18	225
2003	53,013	163,091,418	24,990	113,308,168	18	247
2004	69,057	194,866,736	28,183	185,871,012	20	313
2005	94,342	321,597,487	31,090	255,279,288	26	486
2006	119,118	361,498,800	43,689	366,003,832	30	552
2007	158,857	415,650,851	49,959	404,837,729	33	710
2008	190,269	515,107,088	54,204	481,520,887	39	765
2009	198,740	602,942,815	46,344	365,859,841	41	743

Data source: Fonkoze, "Key Statistics," <http://fonkoze.org/aboutfonkoze/keystatistics.html>. Accessed 4 July 2011.

²³² All amounts are in Haitian gourdes. The exchange rate on June 2, 2010, was HTG39.5030 to USD1.00.

Exhibit 7: Transformational Gaming: Zynga's Social Strategy (B)

(RED) Initiative Giving Models

- Bugaboo Strollers donates 1 % of all company proceeds.²³³
- Nike donates 100 % of the proceeds from the sale of (PRODUCT) RED items.²³⁴
- Gap, Inc. donates 50 % of the proceeds from the sale of (PRODUCT) RED items.²³⁵
- Armani donates 40 % of the gross profit proceeds from the sale of (PRODUCT) RED items.²³⁶
- Converse donates between 5 % and 15 % of the net wholesale price from the sale of (PRODUCT) RED items.²³⁷
- Apple donates \$10 of the proceeds from the sale of (PRODUCT) RED items.²³⁸
- Hallmark donates 8 % of the net wholesale sales from (PRODUCT) RED items.²³⁹
- Starbucks donates between \$0.05 and \$1 of the proceeds from the sale of (PRODUCT) RED items.²⁴⁰

²³³ Bugaboo (PRODUCT) RED, <http://www.bugaboostrollers.com/web/guest/learn/bugaboo-red>. Accessed 7 Feb 2012.

²³⁴ Nike(RED), "See the Impact," http://www.nike.com/nikeos/p/red/en_US/impact. Accessed 7 Feb 2012.

²³⁵ "Gap (PRODUCT) RED Showcases Company's Ongoing Commitment to Social Responsibility," Gap Inc. press release, October 13, 2006.

²³⁶ Tschorn, Adam, Rose Apodaca, and Samantha Conti. 2006. RED brigade: Gap, Armani to battle AIDS; musician and activist Bono Launches PRODUCT RED campaign to raise funds for treating disease around the World. *Daily News Record*, January 30, 2006.

²³⁷ Converse, "Converse (PRODUCT RED)," <http://www.converse.com.sg/products/116554.asp>. Accessed 7 Feb 7 2012.

²³⁸ "Apple Announces iPod nano (PRODUCT) RED Special Edition: Portion of Proceeds Contributed to the Global Fund to Fight AIDS," Apple Inc. press release, October 13, 2006, <http://www.apple.com/pr/library/2006/10/13Apple-Announces-iPod-nano-PRODUCT-RED-Special-Edition.html>. Accessed 7 Feb 2012.

²³⁹ Hallmark (PRODUCT) RED COLLECTION, <http://www.hallmark.com/online/red/>. Accessed 7 Feb 2012.

²⁴⁰ (Starbucks) RED, "Buy (STARBUCKS) RED. Help Save Lives.," <http://red.starbucks.com/red/default.aspx>. Accessed 7 Feb 2012.

Global Poverty Alleviation: A Case Book

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