

Causes of failure and abandonment of projects and project deliverables in Africa

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Introduction

The focus of this paper is the exploration of causes of failure and abandonment of project deliverables. That is to investigate the causes that lead to the failure and abandonment of deliverables obtained after the successful completion of projects. The deliverables have been formally handed over to the customer or user for whom the project has been undertaken, and the project closed. However, a few years after the apparently successful takeover of the deliverables by the user, they fail and later are abandoned.

It is certainly normal for a product or system to fail after it has been produced. However, when it fails and cannot be repaired because it could be damaged beyond repairs or the resources with which to effect repairs are not available to the user, it is abandoned. Abandoned deliverables and projects are not strange to nationals of developing countries. Indeed, our industrial landscape is littered with abandoned project deliverables in various stages of disrepair. The common thread running through each of them is that they cannot be repaired and therefore abandoned for good. A report from the Abandoned Projects Audit Commission which was set up by President Goodluck Jonathan in 2011 shows that 11,886 federal government projects were abandoned in the past 40 years, that is from 1971 to 2011, in Nigeria. The number should be much higher if projects from the various states are included. This lends some credence to the assertion by Osemenan “that Nigeria has become the world’s junk –yard of abandoned and failed projects worth billions of naira”[1].

As stated in the foregoing paragraph, much money is lost annually because of these failures. Investors in such projects are the countries who own the abandoned projects, the UN, World Bank, international agencies and communities. What is more, it leads to the economic retardation of nations. How and why? It is simply because 5 or 10 years national development plans are prepared by nations to help them climb up the “economic development ladder”. These plans are comprised of projections and milestones of when certain projects, which are the building blocks and components of the development plans, will be implemented. When implemented, they help to enhance and facilitate the economy and industrial infrastructure of the nations. The operation of the deliverable could constitute a base, “steps or rungs of ladder” on which other new projects can be implemented. In the event of the failure of the first project, the implementation of the second and subsequent projects cannot happen.

To reduce abstraction and dwelling in the theoretical in the foregoing explanation, consider that the first project is the building and implementation of an electricity generating power plant of 6 x 250 megawatts. When it is completed, it will feed 1500 megawatts into the national grid. This will help enhance the national power supply, especially its stability since the voltage and frequency can become stable at the rated values. Besides, power supply capacity is increased high enough to feed many users, businesses, and organisations. With such stable power supply, Broadband Internet system can be introduced. Web hosting application in the Cloud can be used

by businesses and companies. However, if the power plant is commissioned into operation and within six months, most of the units fail and are abandoned, the power situation in the nation cannot improve. The introduction of Broadband Internet, web hosting and Cloud cannot take place. The nation is back to its pre-power project implementation condition. Progress and economic development are not just at a standstill but are being retarded because of much money that has been invested in the failed power plant to no effect. Again to be more specific in this scenario, it is the case that at this point of writing, web hosting and Cloud Computing cannot be used in most African countries because the power supply infrastructure to support the technology is not available. It is only in multinational or large organisations, which have their own power supply and not dependent on the national power supply, that such technology is in use.

In preparing this write-up, research has been carried out, on some African countries, on some failed and abandoned project deliverables since the objective is to discover the causes of failure of already completed and handed-over deliverables. Some of the findings will be listed and later discussed in depths. This is because it may be relevant to highlight the importance of the project deliverable and then present actual, real-life events that led to their failure and consequent abandonment. At the end of the presentation, an analysis and summary of causes of failure and abandonment of the deliverables will be made. These will constitute lessons learned for our education as investors in developing nations. Hopefully, they could provide guidelines for future investments such that lessons from past failures could help prepare investors and planners for success of new projects.

List of some failed and abandoned project deliverables

Some of the failed and abandoned project deliverables are listed as examples. Following this listing, detailed discussion of each example will be made.

1. Failure of the Ghana-STX Building Project, a \$10 billion housing project [1]
2. Failure of Egypt's Toshka, New Valley Project, Failure of Egypt's Toshka, New Valley Project, Egypt's \$90 Billion South Valley Project [2][3]
3. Failure in the Telecommunications Industry in South Africa[4]
4. Microsoft's Digital Villages[6]
5. Failure of Completed Water Projects[8]
6. Money 'wasted' on water projects in Africa[10]
7. "Unacceptable and Irresponsible Failures in the number of African Renewable Energy Projects" – Rod Cargill [11]
8. Failed and successful Renewable Energy Projects in Nigeria [12][13]

Detailed discussion of the failed and abandoned project deliverables

1. Failure of the Ghana-STX Building Project, a \$10 billion housing project [1]

Many Ghanaians were shocked when they heard in December 30, 2011 about the failure and abandonment of the \$10-billion housing project between the Government of Ghana and STX Engineering & Construction Limited of South Korea.

Importance: The project was supposed to lead to the construction of 200,000 houses in Ghana in five (5) years. The agreement was signed in 2009 and hailed by some as “the best thing ever to happen to Ghana”. A 12-member government delegation led by then Minister of Water Resources Works and Housing signed the STX Housing Project deal in 2009.

Failure: Information on its failure and abandonment was disclosed on Friday, December 30, 2011, by the Vice President John Dramani Mahama in the National Democratic Congress (NDC) government when he talked with the Parliamentary Press Corp in Accra.

Causes of failure: From research findings, causes of failure of the project include the following:

- Haphazard management of the project by the Ghanaian Government. Effective governance apparently was missing as disunity and quarrels were reported between the Ghanaian and Korean partners of STX Engineering & Construction Ghana Limited, the local subsidiary of STX Korea. The CEO of the Ghanaian subsidiary was B.K. Asamoah.
- Corruption was probably a contributory factor. For example, the consulting architectural concept design allegedly prepared by a professor at the Kwame Nkrumah University of Science and Technology (KNUST), on the orders of B.K. Asamoah, cost the company about \$21 million, when the Koreans claimed they could do it for only \$5 million.
- Poor planning and absence of credible feasibility studies.

Comment: This failure was just one of many failed major projects, not only in Ghana, but also in other countries in the developing world. The Toshka New Valley project in Egypt is another example which deserves a review.

2. Failure of Egypt’s Toshka, New Valley Project, Egypt’s \$90 Billion South Valley Project[2] [3]

Importance: The Toshka New Valley project was planned to develop agricultural production and to create new jobs away from the Nile Valley by creating a second Nile Valley. The project was meant to help Egypt deal with its growing urban population and was described as the “New era of hope for Egypt”. It was intended to house more than three million residents and to increase Egypt’s arable land area by 10%. [2]

The justification is that about 83 million Egyptians are densely packed into just 3 percent of the land which is arable. Therefore, Egypt’s planners are undertaking many projects to redistribute the population by creating new areas that can sustain life by diverting the Nile to the Sahara Desert, in effect, creating new oases. The South Valley Development project, an attempt to relocate up to 6 million Egyptians was started in the 1980s to convert one million “feddans” (1.038 million acres) of the Sahara Desert into land for agricultural and industrial development and secondarily to promote economic activity that would reduce high rates of unemployment amongst Egypt’s youth. [3]

Causes of failure: However, it appears that not everything was taken into full consideration during planning. For one, the Western Desert’s high saline levels and the presence of

underground aquifers in the area act as a major hindrance to any irrigation project. As the land is irrigated, the salt mixes with the aquifers and reduces access to potable water.

In 2005, the government announced that it was abandoning the second phase entirely and that the deadline for the project's completion was extended to 2022. It is observed that canceling the second phase did not increase the project's chances of success, because so many initial targets had not been met.

“(Toshka) was failing so badly in the first place that it didn't make a difference to cancel the second phase,” observes Conservationist Mindy Bahaa Eddin. She considers Toshka an example of “disaster planning” in Egypt. She said that there is a greater need for stakeholder consultations when working out details of such large-scale projects, so that potential problems can be understood and resolved ahead of time. For example, she said, Toshka would have caused great damage to the many ancient sites found in Kharga Oasis, in a similar way that water is currently creating problems for sites in Fayoum.

Comments: Toshka has failed in the sense that the original plan is no longer being implemented and probably cannot be implemented and now abandoned. However, it has been modified and is still being implemented.

The failure and abandonment of ongoing or completed projects is not just a feature of construction industry as it also occurs in other industries. An example is a failure in the telecommunications industry in South Africa.

3. **Failure in the Telecommunications Industry in South Africa**[4]

Sentech was the first company in South Africa to launch a wireless Broadband service, introducing services in the 3.5GHz band under the brand MyWireless in 2002. However, due to financial constraints there has only been a limited rollout to parts of Johannesburg, Cape Town, Durban, Pretoria and Nelspruit

Failure of the Sentech MyWireless and BizNet offerings[4] : Over the years, there have been many failed telecommunications projects. Probably, some of the most high profile failures were those by Sentech in its MyWireless and BizNet offerings.

Causes of failure: In October, 2010, Sentech could not collect more than 60% of the money it was owed, its former leadership went aground amidst accusations of mismanagement, and the auditor-general was concerned they could not pay their bills to creditors[5]. The MyWireless product was terminated in 2009 after the company proved it was unable to compete with better-resourced private-sector operators in the retail consumer market.

Comments: It is relevant that in spite of the failures they experienced, Sentech Limited has been reorganised as a successful State Owned Enterprise (SOE) operating in the broadcasting signal distribution and telecommunications sectors and reporting to the Minister of Telecommunications and Postal Services. It is described as the signal distributor for the South African Broadcasting Corporation and began operations in 1992. Probably, one of the positive lessons that could be taken away from the story of Sentech is that in spite of a temporary failure, a company could be turned around if it could be reorganized with changes in its management and properly funded.

4 Microsoft's Digital Villages in South Africa[6]

Genesis and importance: On 9th March 1997, Bill Gates reportedly launched the “digital villages” concept in the black township of Soweto, which made headline news by its mass uprising in 1977. This township suffered and probably still suffers from extreme poverty. It was reported in the Spokesman Review, a daily newspaper in Spokane, Washington, USA, that when Gates visited in '97 “a computer could cost as much as a house” and few people would think of going online. The launched centre was South Africa's first free-access “digital village,” funded by Microsoft, local computer companies and US development organisation, Africare. The concept was that the \$100,000 computer package, housed in the Chiawelo Community Center, should give the township's poor residents a link to the information age. As part of the opening, Gates observed a class from the local Elsie Ngidi primary school using computers for the first time, before reportedly telling a crowd of 200: “Soweto is a milestone. There are major decisions ahead about whether technology will leave the developing world behind. This is to close the gap.”

Failed and abandoned project, or is it? It was reported that even by 2013, there was hardly any evidence of the “digital villages” across South Africa. “[They] worked well for a while but collapsed as soon as the sponsors stopped funding the activities – the community had failed to make the use of technology self-sustaining.” Adrian Schofield, Vice Chairman, Africa ICT Alliance explained: “What should have been a model for others to follow became a failure. This is a common outcome, where there is no long-term follow through.”[6]

Digital Villages Resuscitated? However, the report of the complete collapse of the concept in South Africa appears not well founded. It was likely that the computer package, housed in the Chiawelo Community Center might have failed but there are other digital villages, based on the concept, in other areas of South Africa. Some of these will be discussed in the next paragraphs.

Equipping Rustenburg schools with technology – Digital Village: Microsoft, Comparex Africa, Anglo Platinum, Telkom Foundation and the Digital Partnership joined forces through the Kopano Joint Venture to equip three Rustenburg schools with technology. The computer centres were officially opened and handed over to the school communities by Andile Ngcaba, the Director General, Department of Communications during a ceremony at Sedibelo Middle School in Moruleng, Rustenburg on 23 May 2003.

New Digital Villages: New projects have been set up at:

- Raluombe High School, Mashamba, Limpopo
- Modderbee Prison, East Rand, Gauteng
- Tokologo Centre for Quadriplegics, Protea Glen, Gauteng
- Siyabonga Telecentre, Orange Farm, Gauteng

Comments - The Microsoft-operated Digital Villages concept is a classic illustration of planning a project, properly resourcing it, and providing resources for its follow-up when it goes into operation. This is followed by regular monitoring of its performance to ensure that the project deliverables do not fail. It could be seen as a model to be adapted according to local requirements in providing foreign aided services to the developing world. [7]

5. Failure of Completed Water (Borehole) Projects

One of the Sustainable Development Goals (SDG) of the UN on water is to increase access to clean water and sanitation facilities for communities where such facilities do not exist. A failure of water projects discussed here is the failure of projects on boreholes [8].

5.1 Failure of projects on boreholes

Project type: Failure of projects on boreholes and wells (developing community water sources). The original report was compiled by Mr. Hylton Ferreira, CEO at International Project Leadership Academy Namibia Ltd. International Donor Agencies

Importance of the water projects: An African, a Nigerian, who is the writer of this paper had the experience of travelling for about 3 miles to fetch water with a small clay pot in the nearest clean water source, in this case a spring. This was about fifty years ago when he lived as a boy of between 9 and 11 years of age in a village in Okigwe district with his grandmother in the South East of Nigeria. There has been a noticeable improvement in that there is now a pipe borne potable water which is centrally located in the market place where water for household requirements could be fetched in buckets and pots. Similarly, in many other rural areas of sub Saharan Africa, it is the practice that people walk some miles to the nearest borehole to get clean water for daily consumption in a small container which could be about four litres. This could be the total water available to a family of about four five for the day. It is certainly not surprising that international donor agencies have invested much money to help alleviate the problems since water is necessary for healthy living and survival.

However, it is reported that as much as \$360 million has been spent on building boreholes and wells that failed and some were abandoned as they could not be repaired.

Causes of failure: Some causes of failure and abandonment of about 50, 000 boreholes include the following:

- Poor construction, lack of expertise and experience of maintaining the system
- Poor supervision, failure caused by well users, and poor technology choice. In a report by Casey and Carter of WaterAid Global, it is stated that: “People tend to make assumptions about why water sources fail and blame a lack of spare parts, financing, maintenance problems or climate change, for example. But often, the cause is not clear” [9]. Experience shows that the reported causes of failure are partial and not complete.
- Other causes of the failures include:
 - Operational malfunction,
 - Lack of support to ensure long-term sustainability,
 - Insufficient capacity building at local level,
 - Failure to ensure availability of sufficient resources,
 - Lack of project management training and support.

6 Money 'wasted' on water projects in Africa

This is a second report on water projects in Africa under the title: “Money 'wasted' on water projects in Africa”. The report criticises donors, governments and non-governmental organisations (NGOs) for installing boreholes and wells in rural Africa without providing resources and facilities for their long-term sustainability. It is written by Annie Kelly appears in Katine Chronicles blog [10]. It states that “Hundreds of millions of dollars have been wasted on clean water projects in rural Africa”.

As already reported in the earlier paragraph on the losses experienced, the International Institute for Environment and Development (IIED) says up to US\$360m has been spent on building boreholes and wells that then become useless because they are not maintained or fixed when they break down. As a result, 50,000 water supply points are not functioning across rural Africa. The report continues, “only one third of water points built by NGOs in Senegal's Kaolack region are working and 58% of water points in northern Ghana are in disrepair”. This was as in 2009. The original author of the report, Mr. Jamie Skinner, writes that water points are often built by donors, governments and NGOs without fully consulting local people. As a result, they fail to find out “just how much it will cost to keep the boreholes clean and functioning over a sustained period of time”. He goes on to write that drilling a borehole in a rural community was analogous to asking people to run a cooperative private water supply. He goes on to write: "There is no point an external agency coming in, putting in a drill-hole and then passing it over to the local community if they can't afford to maintain it over the next 10 or 20 years. There needs to be a proper assessment of just how much local people are able to finance these water points. It's not enough to just drill and walk away."

Comments: These problems have been encapsulated by the incident reported in Katine sub-county in north-east Uganda. In 2007, before the African Medical and Research Foundation (AMREF) and Farm-Africa began their development work in Katine, worms were found in the polluted water supply at the village of Abia, next to the Emuru swamp. This was from a badly constructed and poorly maintained shallow well, dug by a charity; it was full of soil and animal faeces and was making local people sick. This is the sorry state of wells which have been produced and passed on to the locals without any adequate and effective arrangement for its maintenance and sustenance.

New operations strategy

AMREF developed the following strategy for their new operations

- Training of local communities to operate and maintain the new safe water points that have been established in the sub-county since the project began.
- Water and sanitation committees have been set up to monitor the new boreholes that have been dug and to contact newly trained hand-pump mechanics if one breaks down.
- The committees meet regularly with village health teams to discuss needs
- It is planned that everyone who uses the boreholes and wells will contribute financially to their long-term upkeep.

7. Unacceptable and Irresponsible Failures in the number of African Renewable Energy Projects – Rod Cargill [11]

Rod Cargill was the director of the African Renewable Energy Forum held in Senegal. Actually, his very words were: "The number of failed renewable energy projects in Africa over the last 20 years is unacceptable, and verging on the irresponsible. These failed projects have set back development by raising aspirations and then failing to deliver."

Importance: Africa is rich in renewable natural resources: Africa has a great potential to become a gold mine in clean energy through its abundance of renewable energy in solar and wind resources. However, there are obstacles to overcome. These include wars, political instability, poor infrastructure and financial resources.

Further, the World Bank reports that the renewable energy potential for Africa could provide more than 170 gigawatts of additional power generation capacity; this is reportedly more than double the current power-generation capacity in the continent. Such renewable projects could avoid the production of some 740 million tons of carbon dioxide annually. The total cost of such projects is estimated at \$157 billion. The projects are said to be economically viable if carbon revenues are added, explains Massaba Thioye, World Bank senior energy specialist.

During the meeting in Dakar, Senegal from the 3rd to 5th September 2008, officers of the UN, World Bank, and business leaders discussed strategies for "Clean Development Mechanism" (CDM) projects on the continent. These are said to be greenhouse gas reducing initiatives that industrialised countries can support as a compensation for their excessive emissions. A theme at the conference was the possibility of engaging in future CDM projects under a successor agreement to the Kyoto Protocol.

Problem of low investments in Africa

It is reported that Africa has received the least investment from the \$7 billion annual CDM market. Only 0.02% or 27 out of 1,156 CDM projects have been registered in Africa since 2002 when European Union began trading "carbon credits" through its Emissions Trading Scheme. Yvo de Boer, executive secretary of the U.N. Framework Convention on Climate Change (UNFCCC), presented this information to the carbon forum.

Further, Sub-Saharan Africa could receive only 1.4 percent of the 3,700 CDM projects worldwide as at September 1, 2008. Again, during the Africa Energy Forum in June 2008, participants focused almost entirely on fossil fuel-based energy sources, according to World Council for Renewable Energy Chairman Preben Maegaard. It was at this that Maegaard complained that the forum lacked a renewable energy focus. This prompted the conference director Rod Cargill to respond that "Africa's future energy growth is reliant on conventional power sources and that the renewable energy hype has only provided set-backs". He followed up this statement with an email in which he wrote "To claim that Africa's problems of poverty would be alleviated by relying on renewable energy is folly," "The number of failed renewable energy projects in Africa over the last 20 years is unacceptable, and verging on the irresponsible. These failed projects have set back development by raising aspirations and then failing to deliver."

Comments: Following the dismissive comments by Rod Cargill, it is considered necessary to review energy status and power projects on renewable energy resources and their results. It may be relevant to examine the causes of failures or successes in order to encourage or discourage such investments.

8. Failed Renewable Energy Projects in Nigeria [12]

It is reported that renewable energy projects in Nigeria fail because of reasons which include the following:

1. Poor planning and lack of project planning skills by planners. For example, it is said that the planners lacked information such as :
 - The number of users to be supplied with the power generated
 - Suitable location for the planned solar parks for the target customers
 - How the power from the project should be connected to the grid.
2. Absence of adequate government support.
3. No arrangement made for the maintenance and management of the delivered renewable energy supply
4. There is also the necessity for better government control of the renewable energy market. Sir Emmanuel Onyejeose, the Editor, Nigeria Alternative Energy reported that there was an influx of fake solar panels from China to Ghana. According to him this could have been prevented if there had been an effective government control. He continues: "Governments in Africa are still finding it difficult to officially adopt the technology, and this has greatly affected its uptake,"

Nigeria's Solar Projects Yield Both Failure and Success: An Example of a Failed Renewable Energy Project in Nigeria [13]

Five years after its installation, a Lagos State government-sponsored solar project at the Osinowo village of Bishop Kodji is not functioning. This was the first of its kind in the state. The project was built to provide electric power for water pumps, fish driers, and street lamps, giving the small fishing and boat-carving community's 5,000 residents easier access to drinking water, securing their sandy streets, and strengthening their fishing economy. It was hoped the photovoltaic system would power water pumps and fish driers in the community but it has not worked. To help understand its geography, the island is just fifteen minutes by boat from Lagos Island, one of the most developed and wealthiest areas of the country. "We don't know what's going on," said Azime Anthony, a traditional leader in Bishop Kodji. "It only worked for about three months, and then it stopped. All the places where we are supposed to have light are dark and they never came back to try to fix any of it." Other projects on solar power and alternative energy sources started by the Lagos State Government have not functioned properly.

In an effort to reactivate the failed system at Bishop Kodji, in 2006 the Lagos State government operatives stepped in and installed 300-watt photovoltaic (PV) panels at two sites. The system was to supply power to the community building, the primary school, a

church, a mosque, and a water pump that was installed at the village well to lift water into an overhead tank. This was according to a report on the project by Adenike Boyo, director of science and technology at the Directorate of Policy, Programmes and Promotion for the state of Lagos.

The project was lauded after this repair as a cost-effective triumph. "These people are living off grid," said Tunji Olagunju, the engineer in charge of the Bishop Kodji project. "There was no possibility of getting the national power supply from PHCN to them even in the next 50, 60 years, but they too must benefit from government; and that is why Lagos state decided that they had to give them alternative energy which, in this case, is solar."

Considering its relatively small budget, the project appeared to be the perfect solution to the state's rural electrification issues. "It costs about 150 million naira (about \$1.2 million) to connect each village to the national grid, while the solar energy project costs only about 10 million naira (about \$83,000) per village," Kadri Hamzat, state commissioner of science and technology, said in an interview with journalists at the project's launch.

After the initial success at Bishop Kodji, Lagos State officials introduced similar projects in nine other communities. But problems soon emerged, the first, resulting from local jealousies. Residents say that once news of their solar installation spread, people from neighbouring communities came and sabotaged the solar units. State workers replaced cut wires, only to be called out again when the panels failed a second time due to an undetermined mechanical failure. Residents say state workers have not returned for routine servicing since then.

"It wasn't something that we could predict," Olagunju said. "We have gone out several times to fix the issues that we find. But most of the problems come from poor maintenance by the residents," he said.

Residents, some of whom were trained to maintain the equipment, say state officials are to blame. Dansu, one of the trained residents wrote: "We went to Alausa (the government centre), we wrote letters that they needed to come. This thing is not working, because when it was working we were all enjoying it and we were happy. We wrote and kept persisting; they didn't answer us. We called over the phone and we even went there in person; they never answered us."

The residents of Bishop Kodji still hope that the solar installations that promised to change their lives will work again. "We are fishermen," Anthony said. "We catch fish, we treat them, and then we sell them to our own people. We see that the government is trying to do something for us. But we need them to do more. We need a hospital. We need a better school. And we need light."

Successful Renewable Energy Project in Nigeria[13]

There are successful solar projects in northern Nigeria, particularly in Jigawa State. They provide not only water but also a microenterprise centre. They provide power supply to healthcare and educational services. According to the writer, the difference between success and failure is summarised below:

It is not enough to install equipment; the power systems as well as the communities in which they are built-need to be planned carefully, funded adequately, and sustained for the long-term. The detailed account is given next.

A Bright Spot in Jigawa

In 2001, Ibrahim Turaki, who was then governor of Jigawa state, obtained funding assistance from the Japanese government to launch a full-scale rural electrification project, with additional funding assistance from the United States Agency for International Development (USAID) and the United States Department of Energy. The sponsors invested \$450,000, more than five times the amount spent at Bishop Kodji. The Jigawa project was implemented and maintained by the Solar Electric Light Fund (SELF), a nongovernmental organization based in Washington, D.C., that has been spearheading solar projects in the developing world for 21 years. The SELF-directed scheme launched with bigger goals and more risks than Bishop Kodji, and has yielded greater results.

"We wanted to create a comprehensive project that would touch every aspect of their lives," said Robert Freling, executive director of SELF. "We provided power for a water-pumping system that pushed clean water into the village. Women can turn on a tap and have fresh water in the town centre without walking miles to fetch it. There is a microenterprise centre, street lighting, lights for 20 homes, a portable pump that they can take from field to field and water their crops. It's really remarkable."

The system in Jigawa powers vaccine refrigerators, and lights health centres, schools, and religious centres. At night, because of the electricity, villagers can receive emergency care in the health centre, primary schools double as adult education centres, and villagers gather in the cool evenings under solar-powered streetlights.

The SELF website has it that as a result of the steady access to power in Jigawa, residents were able to open a computer technology trade school and became the first state in northern Nigeria to create a satellite-based broadband Internet and communications system to link all local government districts.

"(After Jigawa), we got requests from pretty much every state in Nigeria looking to implement something similar," Freling said.

Freling believes the difference between what happened at Bishop Kodji and what happened in Jigawa is in both the planning and the maintenance.

"Sustainability is our primary concern," Freling said. "If you have a project that's well thought out, funded, and executed, you have a project that should last not months but years. There should always be a sustainability plan in mind from the beginning."

Analysis and Concluding Remarks

An Analysis of Causes of Failure and Abandonment

S/No.	Failed and Abandoned project /deliverable	Cause of failure	Remarks
1	Ghana STX Building	This was due mostly to disunity, lack of effective governance and project control. Corruption was also a feature	Project abandoned
2	Egypt's Toshka, New Valley Project	Poor planning and lack of consultation with stakeholders	Original plan abandoned but modified project is continuing
3	Failure in the Telecommunications Industry in South Africa: Failure of the Sentech MyWireless and BizNet offerings	Alleged mismanagement, poor cash flow and inability to collect debt and generate revenue.	Sentech with reorganised management has been turned around and now is performing well
4	Microsoft's Digital Villages in South Africa	It was reported that the community could not maintain the digital village in the Chiawelo Community Center and it failed. The concept was alleged to have died in the whole of South Africa	Research has shown that digital villages run by Microsoft in Rustenburg, Raluombe, Mashamba, Limpopo, etc. , were in operation and did not fail as alleged. Indeed, the community cum partners arrangement for operating the digital villages by Microsoft is so effective that it could be a model worthy of emulation.
5	Failure of Completed Water (Borehole) Projects	Local community lack expertise, experience, resources for maintenance, project management training, etc. There is also inadequate consultation with local community before they were hardly involved in planning. There was no arrangement to support the delivered wales with resources for their continued maintenance after the takeover by the local community	It is mostly when community is consulted, trained and involved, and supported both during and after the project that success is achieved. Also there is success in Ghana that the water scheme has been successful because the government has been involved with NGOs and the communities, providing ongoing support to ensure success.

6	Failure of completed renewable energy projects	Poor planning, absence of project management skills, no consultation with locals, poor government involvement, poor or indeed no support for project deliverables at the end of the project.	Outstanding success has been registered in Nigeria where the project deliverable is being maintained by an external agency in conjunction with the community. The agency is not just supporting but operating and maintaining the delivered solar power plant to ensure its sustainability..
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Some concluding comments to this research and analysis are necessary to ensure that as much comprehensive information as possible has been presented.

1. **Corruption:** Generally in business and official dealings in Africa, most failures are blamed on corruption. There is no running away from the fact that corruption causes a lot of harm in business, social and economic development of Africa. It is however instructive that throughout this research, it is only once, that is the failure of STX building project, that corruption has been highlighted as contributory to the failure. Even in this case, there was ineffective governance and haphazard control of the project by the government. It was likely that if there was effective control with checks-and-balances built into the administrative structure of the project, the failure might not have occurred and the reported corruption could not have happened.

Again while it is not being proposed here that some of the failures recorded in many projects were not due to corruption, the point being made is that it is a weak and loose establishment, where indiscipline thrives, that provides the fertile ground for corruption to germinate, grow and flourish. This observation is borne out in the experience in Sentech in South Africa. Their flagship product, MyWireless failed and was abandoned because of poor cash flow, probably corruption, inability to collect revenue from sales; these were all pointers to a weak and ineffective administration that happily had to go. The new administration with its discipline turned around the company, and today Sentech is regarded as a successful company.

2. **Lack of skills, absence of training and ignorance of project management knowledge:** Most of the failures were recorded as a result of lack of skills, poor planning and absence of project management training. Indeed, almost all failures are traceable to these causes; the failure of the STX in Ghana, failure of Toshka, failure of the telecommunication services in South Africa, the alleged failure of the digital villages, failure and abandonment of the boreholes, failure of the renewable energy projects. The fact was that the project deliverables failed because the users had no clue of how to maintain and keep them in operation. It does stand to reason that a competent workman is well trained otherwise he will not have the knowledge that delivers the competence.

3. **Lack of resources, failure to include the local community in planning, project implementation, operations and no arrangement for maintenance and operation of the project deliverables:** Research shows that where the communities were involved in the project and operation, with their operatives were trained, and resources provided for the operation of the taken over project deliverable, success is recorded. The Microsoft business plan for the Digital Village, the AMREF operated bore holes, and the SELF-operated solar power plants in Jigawa, Nigeria, are all success stories because the local communities were involved in the planning, participated in the project, involved in the operation and provided with resources on the operation of the deliverable after take-over. In addition, the external support is not completely removed from the scene.
4. In effect when any foreign aid service is being taken to a developing nation, for example, it is not encouraged to buy the equipment and drop it with the community and go home. No, that is a recipe for certain failure. This is one of the main findings of this research.

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