



Promoting Cyber Security through the Effective Use of Science Diplomacy in Ghana



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Introduction

Ghana, a Middle Income Country, in the West African region of the African Continent shares borders with Togo at the East, Burkina Faso on the North and Cote D'ivoire at the West. Ghana stands alone as the only English speaking country among these three Francophone countries with the Gulf of Guinea, representing Ghana's territorial waters at the South. It has a population of about 28 million with diverse ethnic groups dominated by the Akans. Growing economies are the outcome of technological advancement and scientific mechanisms, so cyber-crime cannot be overlooked, hence the need for Ghana is to intensify its cyber space with emerging scientific and technological approaches through Science Diplomacy. Science Diplomacy is an emerging strong tool for diplomacy and foreign policy, and is often based on the countries' principal objectives and interest to address common problems as they build constructive international partnerships. This can be identified in three dimensions – Science in Diplomacy, which is known to be the action whereby science informs foreign policy objectives, Diplomacy for Science, This is where Diplomacy facilitates science cooperation, whilst Science for Diplomacy, where science cooperation among Nation States improves international relations.

Cyber Security Systems

Cyber Security cooperation remains a prominent area of mutual interest among different countries of the world. For instance, Singapore's Cyber Security Agency (CSA) and the US Department

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of Homeland Security have lately established a formal cyber security partnership. This agreement would improve bilateral cyber security and would potentially create mechanisms for ASEAN nations to address better their cyber security challenges. It is in this face that Ghana government through its Ministry of Communication is on the rapid pace to ensure establishment of a National Cyber Security Centre (NCSC) as has been done in some other countries to liaise with relevant state agencies, the private sector, countries within and outside Africa, to oversee cyber security operations at all levels. Ghana's flagship policies like the national identification system, the digital property addressing system, e-payments, digital financial services and various e-government initiatives can be undermined simply by cyber-crime.

Cyber-security issues are currently national security threats; Ghana cannot fully reap digital dividends, associated with her adoption of the ICT as a means of our socio-economic transformation, if the country fails to mitigate existing and emerging cyber security threats. On 23 October 2017, the President of Ghana declared the National Cyber-Security Week, and inauguration of the National Cyber-Security Inter-Ministerial Advisory Council, which would work closely with the National Cyber Security Technical Working Group (NCSTWG) acting as the main driver for the implementation of Ghana's National Cyber Security Policy & Strategy (NCSPS). This would ensure enforcement of existing legislation, as it works to review if need be and empower the Data Protection Commission to ensure enforcement of the provisions of the Data Protection Act, 2012 (Act 843). Regular capacity-building trainings, workshops and seminars would be organized to improve forensic capabilities of the Criminal Investigation Department (CID), prosecutors and other law enforcement agencies, including the Economic and Organized Crimes Office (EOCO) and security officers, for enabling and strengthening investigations and prosecution of cyber-facilitated crimes, especially Judges, to update their knowledge on criminal justice response to cybercrime legislations and enforcing fairly provisions as a priority.

The Government of Ghana, through the Ministry of Communication, is presently working on the establishment of a dedicated Computer Emergency Response Team (CERT) to protect critical national information infrastructures and sectorial CERTs for different sectors of the economy based on international standards and benchmarks as a showcase to the world of Ghana's cyber security emergency response readiness. "We have to promote a cyber-security culture among our people, the era of taking chances with the virtual world should end." - President Akufo-Addo (2017).

Science Diplomacy in Cyber Security

Traditionally, countries compete over power, influence and resources. And, when resources are concerned, usually oil, gas, cocoa and rare earth metals (gold, diamond, bauxite) come to mind. There is, however, one resource that stands tall above all the others: Science & Technology. Diplomatic negotiations missed emerging technologies, and became more economic centred with respect to who pays what and who does what. Negotiations must be based on the principles that unite the world more than what divides it. In this regard, Africa and Asia, where majority of the world's people, about 80 percent, lives should have an unflinching interest to transform world speedily through science and technology. Science, in general, is bringing countries together which may not come together because declining of the best leads to nothing but rising of the best. Science Diplomacy is predominantly gaining wider currency lately though but its origin can be traced to 1729, when first foreign secretary was appointed. In as much as self-reliance is important, countries opening up for import of technology have liberalized development at a faster pace.

The debate about diplomacy in the digital age has been recklessly profligated with terminologies. Terms such as e-diplomacy, cyber diplomacy or digital diplomacy are being used almost interchangeably, with each writer sticking to his/her favorite. This wastes three perfectly good

terms where one could be used. It also creates considerable confusion about the relationship between the diplomacy and the digital world.

The government of Ghana through one of the dimensions of Science diplomacy: Diplomacy for Science has negotiated and partnered with the United States government through the Security Governance Initiative (SGI), and the European Union, through their GLACY project, to support country's efforts at addressing cyber security challenges. The Nation through Science for Diplomacy means would further engage international institutions and technological partners such as International Telecommunication Union (ITU), the Commonwealth Telecommunications Organisation (CTO), Google, Facebook and Microsoft, to ensure cyber safety for Ghanaian citizens as well as promote Cyber Security enforcement in the sub-region.

Further, in demonstrating international co-operation towards addressing the challenges of cyber security, Ghana has signed the African Union Convention on Cyber Security and Personal Data Protection, at the 29th AU Summit in Addis Ababa in July 2017. The country, however, intends to access fully the "Budapest Convention" that seeks addressing internet and computer crime by harmonizing national laws, improving investigative techniques, and increasing cooperation among nation-states after getting approval from Cabinet and Parliament.

Challenges

"Every minute we are seeing about a half million attack attempts that are happening in cyber space"- Derek Manky, Fortinet Global Security Strategist. There is a global paradigm shift in national security discourse with much attention on cyber security; following are some challenges facing the nation states around the world.

- Cyber Security has become a National Security problem and it's affecting everybody from top to bottom or bottom to top, making it a universal issue.
- Cyber Crimes cost Nation States a lot of money,

the UK for instance lost 27 billion Pounds as reported by the UK cabinet office. The NATO also has informed that Cyber-crime drains one trillion dollars from the economy yearly.

- Cyber Crimes are borderless and every country is vulnerable since it doesn't need to be launched from a specific place or a country.
- The Future of Threats and Threat Technologies in 2009 reported that cloud computing provides the next opportunity for criminal attacks on data centres.
- The Israeli Electricity Authority had its own share of e-hacking experience when it was hit by a severe Cyber-attack virus, which paralyzed computers. – Dan Goodin (2016).
- The inability of adequate laws governing cyber-crime in Africa especially makes it more comfortable for cyber criminals to operate in that region.
- Cyber-crime activities lead to high level of sim box fraud and mobile devices security threat in Ghana and its environs.

Recommendations

- **Home country relevant stakeholder engagement:** Ghana must identify and involve potential and relevant institutions as well as all security agencies including international cooperation representatives to play a part in promoting cyber security to curb increasing rate of cyber-crime. It is an all-inclusive fight.
- **Regional/Sub- regional cooperation** is a key phenomenon that must be harnessed together to curtail such menace, being a canker which is gradually eating into the fabric of the national security and making cyber security weak. An agenda of common interest must be outlined as early as possible among regional bodies to enable a strong cohesion of regulations against cyber-crime, leading to a win-win end.
- **International cooperation** must come together as often as possible to negotiate and enforce new relevant approaches needed to boost cyber security. This would put the world as a whole in a safer place; not only Ghana. The world must fight a good course together but on principle.

Conclusion

Science Diplomacy as a soft power is advancing with strong grounds and spreading its roots widely across the globe. This, however, is a combination of Science and Technology, Foreign Policy and National Security upon which the case of Ghana's cyber security falls within. It is also worthy to note that multilateral and bilateral decision-making is based primarily on consensus as every country has only one vote. Ghana, however, has exercised its scientific collaboration of science diplomacy by cooperating with the United States of America and the European Union to establish the National Cyber Security center(NCSC) with a single aim of curbing rising menace of cyber-crime in the world, African nations, particularly, Ghana to improve strained international relationships.

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