

White Paper:

“Teaching Factories” - A Proposed Agenda for the Industrialization of Africa

The continent of Africa is not lacking in raw materials, neither does it lack raw brain power. What has been lacking in Africa, by design, has been the proliferation of industries that manufacture the products consumed by the African market. The economic schemes entrenched in most African countries, by design of their former European colonizers, has been that of exporting raw materials and importing finished goods. This is a “Sell Low - Buy High” trading scenario which has the predictable outcome of impoverishing the economies of the continent. The technical education of Africans parallel those of other liberal educational establishments around the world - graduates of African Universities do as well if not better than others when they get a chance to function outside Africa. However, there has been a glaring absence of hands-on training of students at African Universities in the various aspects of design and manufacturing of the goods and services that are in demand by African consumers and other international markets. This white paper presents an approach which employs innovation and enterprise to solve this problem. The effort is at a proposal stage. The purpose of this write up is to invite interested stakeholders to join up with the growing network of other entities that are collaborating to make this a reality.

The concept of Teaching Factories is trending at Universities in many countries of Europe and in North America. It is borrowed from the medical profession where medical students, having completed their formal academic courses, are required to spend time at Teaching Hospitals treating real patients before being awarded their final certification as medical doctors, who can thereafter launch their own practices or join the staff of other hospitals. Like manufacturing, healthcare education requires extensive hands-on experience. They accomplish this through teaching hospitals. In a teaching hospital, not-for-profit status does not preclude the generating of revenue in order to offset operating costs. In the teaching factory, revenue could be generated from production and services - as well as philanthropic contributions, affiliate organization (academic) investments, and grant funding to be used to cover operating costs, including maintenance, and equipment or software updates. A teaching hospital is a practice-based environment where students across a wide range of disciplines gain hands-on experience with industry-standard equipment for real world applications. This is an ideal model for a teaching factory with engineering and technical students working side-by-side with machining, welding, and industrial maintenance students.

Adulawo Institute, a component of the Adulawo Nigeria Network Limited is collaborating with AWENI - the Association for Western Nigeria Innovations - foundation and the United States based Capitol Regional Innovation Cluster Consortium (CRICC) to spearhead this innovative Agenda. AWENI brings relationships with Universities, Businesses and Governmental agencies from the six

south western states of Nigeria - Lagos, Oyo, Osun, Ogun, Ondo and Ekiti states. CRICC brings its ability to interface with US manufacturers and other industrial companies, as well as access to financing via US government agencies such as the EXIM bank and USAID. In a typical implementation of this proposed Agenda, a host University in Africa (with funding from its donors, investors and sponsors) will establish the physical space and infrastructure to house the Teaching Factory geared to a specific sector of the economy. Partnering manufacturing companies will establish industrial grade production operations at the Teaching Factory to meet the demands of the regional, national and international markets. Students from the host University and other collaborating Universities will work side by side with professional staff of the tenant manufacturers over a period specified by the curricula established by their respective Universities. Priority sectors of the economy that are being considered are: Renewable Energy, Agricultural and Transportation Machinery.

Please contact Dr. James A. Fabunmi (see contact information below) for further details on this Agenda if interested in participating in the effort.

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BIO:

Dr. James A. Fabunmi, obtained his Ph.D. in Aeronautical Engineering from the Massachusetts Institute of Technology (MIT), and has been a Research Engineer at Kaman Aerospace Corporation, Faculty member of Aerospace Engineering at University of Maryland College Park, Founder/Owner of the Advanced Engineering Design and Research (AEDAR) Corporation and Consultant to Major Industry, Government Agencies, Innovation Companies and Universities. Dr. Fabunmi has played leadership roles in domestic (United States) and international (Western Nigeria) efforts to promote innovation based economic development of the African Diaspora. He was instrumental in the creation of the US-based Capitol Regional Innovation Cluster Consortium (CRICC), the Association of Western Nigeria Innovations (AWENI), and the Postgraduate Innovation and Enterprise Startup (PIES) Network. He currently resides in Mitchellville, Maryland and can be reached via email at JFABUNMI@ALUM.MIT.EDU