**Research for Ideas and Requirements for a National Electrical Laboratory and Workshop**

An electrical workshop is a place where innovations which are still in theory are designed, implemented and tested thoroughly. Their practicability and utility is tested and seen if it matches the needs and criterion of the innovation. The workshop also does practical jobs such as wiring, circuit board manufacturing, PCB and FPGA manufacturing and basic electrical component manufacturing. In addition to these, it also works on recycling, repairing and maintenance of faulty and broken electrical machinery, equipment and simple electronic materials.

There is no established electrical workshop and lab in Ethiopia and the reason for this comes down to a few crucial factors:

1. Lack of material resources: There are no industries in Ethiopia that build silicon based chips which are the building blocks for any current electronic device. This means we have to import all of our materials from companies that are found in other countries, which is expensive in import costs. And since electronics design is a highly inefficient practice in that it requires trial and error, most basic components are burnt out quickly. We need a way to immediately and efficiently replace these basic components. And for that an electronics plant is necessary.
2. Lack of an electronics manufacturing plant: Electronics manufacturing is done by a few select companies around the world and is currently one of the most lucrative and competitive markets. Though despite its high profit advantages, there is a reason why it is not carried out by many more entities. Primarily, it is a business that requires extremely high starting costs. Building such plants is a very costly process which cripples many who endeavor it at an early stage. Secondarily, electronics market is a very volatile market; the needs that arise today can change overnight completely, so a great deal of flexibility is required to stay alive in the market. Furthermore, the lifetime of products is very short, because the technology is adapting on a breakneck speed. So companies need to change along with the demand, and staying specialized on a certain product almost always results in failure. Besides that, there are many steps involved in manufacturing electronics.
3. All these factors require the country to set a considerable budget for the project, or at least to open up opportunities for private investors to invest in the workshop. For this to succeed, the investors require assurances that the project will be successful and profitable. And this is hard to achieve on the current status of electronics manufacturing in our country.

So, we need to surpass these shortcomings and below are a few suggestions on how to:

1. Organize meetings with officials that can help to push this idea to a practicable phase. It is necessary to secure a strong advocate who can help start up the basic layout for the construction of the laboratory. This is achievable through high level planning and outlining the basic functions of an electrical workshop and how it can affect the lives of the people in our country, how it can be used to solve the major problems of our nation using a technological means and how this can propel our country in the global scheme. Intricate research and documentation is required to appeal to the national level. Furthermore, drafts of budgets and workspace, size of the workshop and the work that goes behind it needs to be professionally designed. The workforce that will be employed for the project, the opportunities it will open up for the youth of the country and the future of the workshop needs to be drafted as well. We need to make sure also that there is an opportunity for investors to invest, because in order to thrive, it is necessary that the laboratory be out of government sponsorship.
2. Once this is achieved, the second step is to find interested parties that want to invest in the project. They need to be convinced of the advantages of building such an infrastructure in the country and the benefits to them as well.
3. We also need to secure a constant source of supplies to back the workshop with. If there is a shortage of material resources, it will cause the failure of the workshop, because a national workshop needs to have a large cache of resources to work with. This may be achieved by building the resources that are immediately necessary at the workshop itself. And bringing in as required some of the more complicated resources from external suppliers.
4. The workforce is the most necessary and crucial part of the project. Without a dedicated and highly efficient workforce, the workshop will not even initialize. Even if it did, it will waste resources and time without producing anything of value. We attract investors and government aid by showing our strong workers who are passionate and knowledgeable about the matter. So securing good workers is a necessity. Our country is a very populous country and has exceptional students who can make a difference. However, they are almost always taken by foreign companies who recognize their talents and promise them better standards. Therefore we need to work more on securing a better deal for our students, here in their country.
5. Good leadership is necessary in order to keep a project alive and functioning. Once the workshop is set to motion, it requires a good managerial base that will make sure the future of the workshop is secure. The leadership should be well organized and modern to make sure we are keeping according to the times, and make sure products are leaving the workshop at a required rate. We also need to make sure that we are educating the future personnel that will keep the laboratory alive.

By following the mentioned practices, we can achieve in finally building the first national workshop where enthusiasts can work on their brilliant ideas without leaving the country.