QUALITY INVESTMENT IN ETHIOPIA

Amir Hamza, Abera Lema, Asamerew Eshete and Tewodros Gebeyehu

Faculty of Informatics, SMUC

Abstract

This paper is among the first research-based quality investment project in Ethiopia and may be in the world. The project emphasizes on solving the following critical problems: inflation rates, creating job opportunities for more than 148,000 people annually, tourism, transforming the country from the agro-leading economy to the industry-leading economy, reducing the foreign currency, promoting proposed business plans to the world automatically. According to this research, the solution for all of the above-stated problems is attracting investors to a country. But how can this be a solution? How can we attract them? Investors need highly profitable business ideas; even they have the details about that business idea, they want to know what colour, type, size, texture, height, style, price, etc. of the products to produce. All the above and more of the questions will be answered and presented to the world for free by newly upcoming software called "Quality investment [beta]".

Introduction

This Project is on quality investment in Ethiopia in order to solve the increase in inflation rates, lack of job opportunities, foreign currency differences of a country, transforming the country from agro-leading to industry-leading economy, tourism, etc. These multi-dimensional causes will be raised and discussed. Thus, there is only one short solution to those problems – creating job jobs. To this end, the agriculture-led economy has to be transformed into industry-led economy so that it can help the country to reduce the foreign currency exchange differences. However, it has become a futile attempt. As coping mechanism, the Ethiopian government should

increase its rates of exchange, products imported, etc. Besides, the newly developed business ideas have to be promoted to the world using different means and by attracting investors to the country.

Presently, there exists only this single software as electronic based solution to those multi-faceted problems in Ethiopia. In the Project, descriptive survey research method using structured questionnaire was used. Moreover, there was collection of live qualitative data on ETV, especially Prime Melese Zenawi's speeches to the Parliament. Secondary data were collected from governmental and non-governmental agents for news, as well as from the Internet. Documentary analysis as qualitative research method was also employed. To this end, content analyses of the relevant documents were conducted. Generally, based on the findings of the study, all of those problems can be solved and the research questions are answered and the objectives are addressed by the newly developed and coming "Quality Investment$^{beta"}$ software which has both desktop and web application sections.

Technical Description of the Project

There has been a research undertaken for more than three years by students who are pursuing their learning in Undergraduate Programme at St. Mary's University College (SMUC). For solving the inflation rates, lack of job opportunities, foreign currency differences of a country, transforming the country from agro-leading to industry-leading economy, tourism, etc. The team members of the research-based Project proposed a solution for those problems and then just tried to implement the prototype of the Project in a classroom which was a success! Now, it is worth describing all the causes and solutions for each of those problems which are currently facing Ethiopia.

Problems Identified

Inflation Rate

It is just the rise of prices for goods and services. Currently, the cause in Ethiopia is just unknowingly storing more dollars in the bank. The primary solution as explained by the Prime Minister of Ethiopia is just producing goods and stuffs. The secondary solution is just increasing the income of the people higher than before. However, it has been tried at least on the part of the Ethiopian Government for several months to bring the inflation rate to single digit as explained by the Ethiopian Prime Minister. This effort failed.

Lack of Job Opportunities

The Ethiopian Government usually takes out several techniques to create business ideas from the people to the people, but few number of those business ideas have been correct; all the others become junks. For example, the Government of Ethiopia incurs over 1.5 million birr a year to enhance people's creativity on the business ideas, according to the news on the Ethiopian Television (ETV). The Government has been engaged in competing more than 600 potential innovators in the Country and has allowed only 10 winners to pass and to win a total of ETB 1.5million (i.e. ETB 150,000 birr for each winner). Unlikely, only 10 business ideas matter nothing for creating job opportunities for the Ethiopian jobless people. If we assume, on average, 74 persons get job opportunities per a business idea, only a total of 740 persons can have these chances.

Every year, there are more than 74,000 Ethiopian gradates. Among these, few of them successfully get the job opportunities and work accordingly.

There usually exist no simple ways to find jobs people mostly work beyond their fields of specialization. Moreover, there had been lack of job variety which was another big issue in the economy. Currently, the already avail data show that 70 % of the people lack jobs in Ethiopia. Therefore, in short, the solution is creating jobs.

Transforming the Ethiopian Economy

As known, about 85% of the people in Ethiopia are farmers and the agriculture sector is currently leading the economy. Due to this reason, Ethiopians are not growing as much as they can. In order to this problem, the Ethiopian Government is trying to change the economy from agro -leading to industry – leading one. To make this progress faster, the Government is trying to call investors to invest on some of the products (such as yarn, etc.).

Reducing the Foreign Currency Differences of a Country

In Ethiopia, the current foreign currency differences of the given country, Ethiopia and other countries are presented as under: 1 USD= ETB18.1691; 1Euro= ETB 22.1553; and 1Pound Sterling= ETB28.4854.

Though the Government is trying hard to minimize the foreign currency differences, it is just getting worth and worth from time to time. The solution for this is just to reduce the import quantity and /or increase the export rates of the country.

Promoting proposed business plans to the world

Every time, the Government of Ethiopia tries to generate business ideas by officially inviting the people to compete for 1.5 million birr, and then the

best business ideas will be awarded for money. But the proposed business ideas were not promoted to the world. The solution for this is just promoting the business ideas to the world.

Solutions for All

According to this study, the solution for all of the above problems is attracting investors to the country. But how can this be a solution? How can we attract them?

Solution for Inflation Rate

Because investors produce goods and stuffs, the rate of inflation rate minimize accordingly. The more it is produced, the higher the reduction of the inflation rate. This is the primary solution in the case of Ethiopia.

Solution for the Lack of Job Opportunities

Once again, the more there exists an investment (investor), the more job positions originate with respect to their department.

Solution for Transforming the Country from Agro – leading to Industry - leading Economy

Investors play great role in transforming the country from agro – leading to industry – leading economy because they are key sectors in this progress. Once more, attracting investors to a given country is the solution for the problem.

Solution in Reducing the Foreign Currency Differences of a Country

Here, the investors shall produce stuffs that are imported highly or they shall export more and more; it is difficult to take the second solution but it is easier to implement the first one.

Background of the Problem

Currently, there exists no single software/hardware in Ethiopia and perhaps even in the world that has tried to solve the critical problems discussed above like the way we try to solve. However, there exists software that is being used in the Ethiopian Custom Import/Export Section. This software is well known as ASYCUDA (Automated system for Custom Data) which is being applied in most of the African countries and in one or two of American states. This software is thus designed for speeding up the taxation system. Presently, there is no relationship between Custom and Inland Revenue with the Ethiopian Investment Agency for solving all of the above-stated economic crises cooperatively.

Research Methodology

In the Project, descriptive survey research method using structured questionnaire was employed. Besides, primary qualitative data and/or pieces of information on ETV were collected. Secondary data were also collected from governmental and non-governmental agents for news, as well as from the web-based Internet files through documentary analyses research method. To this end, qualitative data analysis method, such as content analysis was used to analyze those relevant and potential documents.

Major Findings of the Study

Technical Description for the Solutions

Investors need highly profitable business ideas; even they want to know what colour, type, size, texture, height, style, price, etc. of the product to produce, they want to know more about who the importer for that product is, who may accept and distribute that product, is the product frequently imported? How much does the product worth in Ethiopia, shall I produce Nokia, Motorola, or Samsung? What colours and with what style, texture and cost do Ethiopians need? How much of that product is imported a year /a day/a month? Is the need for that product increasing daily, or from time to time? Which product shall I produce in Ethiopia to get more profit? Shall I produce stuffs, like luxuries equipment? Does the government in Ethiopia help me out? What should I know before investing in Ethiopia, what do other investors say about Ethiopia?

All the above and more of the questions will be answered and presented to the world by newly coming software called "Quality investment [beta]". The software studies all the imported products, accompanied by the photo shoots of that item imported and it analyzes the photos from different angles to create a business idea with the highest profit to invest on and then it promotes this business idea to the world to invest onto that item.

For example, the software might say to the world: "Hey body, do you know that this year in Ethiopia there has been imported more than 20,000,000 of jeans? Do you know that it has been profited more than 2,000,000,000 birr just with in that year? If you want to see the studies made more on jeans, imported in Ethiopia (such as what style, colour, texture, statistics, etc.).

Please go to the download page and download all details for free. If you want to refine the studies made more and more, search for researchers in that section". "You can also download the studies with respect to the photo shoots of that product, too."

The "Quality Investment [beta]" software has got two different sections: The desktop application section and the web application, both collaborate together to analyze and propose cool business idea. The desktop application studies and analyzes all the imports from different angles. Then, it generates its report by preparing it in most "human-like" language without the interruption. The web application communicates with the external interfaces, (such as the investors), and displays for the investor in an attractive and most appropriate way so that investors won't get in trouble searching for something or posting something.

Everything in both the web application and the desktop application was done using the latest software and hardware technologies, such as the Metro (I-phone like) user interfaces was used; all the web applications was done as platform independent so that it can be seen from anywhere in the world all the same in any of the operating systems and in any of the web browsers. All the web applications do not require any plug-ins (they do not require flash players, active x. . .). Unlike most of the web applications, this one has been highly optimized to make run on low speed internet connections and low memory, for example, the Project members used the bounding box technique and the redundant pixel removal technique to make the animating buttons act as a single or double image.

Everything both in the web application and in the desktop application has been done carefully. In choosing the colour for the web application For

example, the team members chose blue colour because it was only blue colour that allowed human beings' body to generate good feelings, including hope; other colours won't. The Project members applied carousel technique that had not required a flash and that worked in all of the web browsers and in all versions. All the reports generated for a single product is now capable of being downloaded from the web anywhere choosing from different file formats (such as PDF, XLS, XCV, HTM and XLIML).

In order for increasing flexibility of the application, the webpage is enhanced with more of highly complicated Ajax-enabled features. The web application also allows any of the investor or other sections to post a blog in the section called "What do other investors say about Ethiopia?"

The web application has the following major pages that interact directly:

- The welcome section: Initiate the investor to invest on something (it makes the investor be eager to see and/or invest on something), this is usually the home page.
- Download section: This is the section where an investor downloads the studied business idea all for free.
- Support section/Priority areas section: This section shows what the support of the government look for the investor, such as recommended areas of investment, policies, etc.
- Approval section: Investors usually need an approval about which if the studied business idea is scam or real this area deals with it. How the studies were made, etc? Why you don't loss section: explains more the reasons why the investor won't lose if he/she invests on the studied area.
- 15+ Section: shows the 15+ reasons for investing in Ethiopia.

- Just Enter/Just Show Me section: This is the key section by which the investor and also any other persons see the studied business idea explained further in robotics/artificial/human-like language. This section tells the investor how much profit he/she will get if he/she invests on the product item explained. It shows that all the studied business idea in decreasing order of profits. In addition, it points where to download the required business idea.
- Contact/About section: This section is where the address of the related companies listed.
- Business plan maker: The Project team can generate a cool business idea but business plan requires more. For example, the software might tell you on which item to invest so that you get X amount of profit, what style, colour, texture, and height to produce, who the importers for that product item are, statistical analysis, etc? However, it is incapable of telling you that how much the land rent worth in Ethiopia does, how much does the cost for the electric power consumption in Ethiopia for your company is, etc? To solve these problems, the section allows Business plan makers to join for free.
- What just Enter is: This section is simply more of marketing, like section.
- Steps to follow section: tells the investor where to go, what the policies are, how he/she is capable of investing? Do you know that Ministry of Trade currently does not have a website?
- Highly available resources section: This section tells the investor what the highly available resources are in Ethiopia.

- More About Ethiopia section: This section tells all about Ethiopia, such as the current government, free land size, policy, currency, political issues, etc.
- How the studies made section: It is simply description of the technical section.
- Blog section: is a section where everyone can talk, everyone can debate, etc.
- The secret section: Although this section is not clearly visible to all, it is something like backdoor opener, where investment agent deletes unnecessary business idea from the page in order for avoiding undesired competition and for creating a variety. (All the investors shall not rely on investing in same thing). This section, unlike the other section, has a login page by which IA login to avoid unnecessary business ideas from the studies made.
- The web application mostly uses a transparent colour (which is composed of RGBa not RGB).

To avoid inconsistency in previewing the web pages scripts check that if the required resource is preloaded on the client computer or not; before proceeding to any other stuff. Though the webpage look working more than the desktop application (the background process), it doesn't. The desktop application is the critical application in this system. Compared to the desktop application, the web application is a dead system.

Similar to the web application, the desktop application is composed of more of technical sections. The desktop application uses Metro (I-phone like) user interfaces which was created recently by Microsoft for Windows 8 operating system, the application uses latest graphic technologies more to

increase the attractiveness, and speed efficiency of the application. It uses professional rendering technique. This application has for different sections that integrate all together to give neat and consistent application. These are: Test Program Beta, Report Generator, Quality Investment beta and the database.

The main application is called “Quality Investment beta.” This is the entry of all the data encoders and/or the DBAs (Database Administrators for their interaction with the system). It has the following major sections:

- The login section: Not everyone has got the power to use the resources applications in the system, before this application start executing its procedure, it read a file with the extension “*.qid” (which is an abbreviation for the quality investment data file). This is because unlike the text files extension (*.txt) it protects itself from being attacked by most of the viruses (“like Dula”) that attack a file sniffing its file extension. This “*.qid” file contain settings for the application startup, such as settings of the database location, theme of the current application, user name and password of the person to login to the system and many more. After the login page read every information was correct and the user is valid user, it then, grant the authority respectively.

- The data entry section: This section has connection with the many of different application, this is the major section of the desktop application, for example it has a sub sections called:
    - Validation section: - Every time you type something in that section and want to pass to the other sections then you will be verified if the form you fill were correct or not. For

example if you start writing using small letters, then this section will tell you that your input is wrong.

- Suggest and append section: - This section is a section by which it aids the data entry be faster and more appropriate, so that there exist no misinterpretation of wrong data caused by wrong input. It is aided with more than 144,000 (One hundred forty four) English words, So, due to this reason, there exist no mistake in inserting data to the system, for example if the data encoder wish to write Jeans and type the letter J, the suggest and append feature aid the writing as the picture shown in the right.

- Countries section: - currently every country is evolved in the system but the system was designed to work with rules of Ethiopia.
- Masks: - This again Aid you to type correctly
- PNG reflection image frame window: - To make the images comply with the theme colors, all of the images was done with ".png" (portable network graphics) file format, this means the background themes can be seen without being covered by the image. Similarly for the photo frame window too.
- Connection with the camera section: - This browse and store the images on the reflection picture box, by resizing the image that was captured using the Canon camera. Canon camera is preferable in our application in two ways:
    a. Canon cameras comply with the C programming language and also with C#, therefore, since our program is done with C#

then we do love Canon better. Canon cameras also have got full functional SDKs.

b. Canon camera can shoot high resolution image remotely from your computer plugged with very long USB cable. (That means you can capture any Image from directly your computer ordering it). (The physical structure is most suitable for our application). [Two canon cameras exist in order for capturing an image, one of the cameras underlies inside a table made from glass and ruler and the other camera relies above the table both cameras are shared in the LAN environment to capture the products imported from anywhere in the LAN].

- Auto-Feed section: This section enables some part of the form to be filled automatically without requesting the user, Such as for example, if you insert some where some Id number that is related with another key somewhere, to make the application consistent, every inputs will be filled with respect to the one filled.
- The TreeGX Product Classification auto complete section: - This part will be described more in the next segment. In short what happens here is that some parts of the application will be filled correctly just with a single click. This section communicates with other application that relies on another framework (Dot net framework 3.5) through clipboard (RAM). If the memory is overwhelmed, then this section might not work properly. This

section also tells the user how much letters were saved from being typed for that single click only.

- Write to the database section: is simply by checking, breaking all the inputs required into different tables, sequencing each of the data respectively, formatting into different data type formats, writes the input to the database.
    - The calendar section: This section similar to other sections has got is Office 2010 like look and feel. Just helps to input required date time (It then will be formatted to MySQL date time file format from C# format).
    - The Data grid view section: This section host different controls in it such as the calendar in a cell, easy filtering mechanism, easy drag and drop group by features…etc. One can use nested group by feature and non nested multi group by feature, for easy group by. (It also use Office 2010 black theme). It is also aided with thin state of the art scroll bar features. It has high refresh rate too.
    - Carousel with Bezier path section: is simply used to see details about the data encoders.
    - Menu tile sections: This section also is one of the sliding ("I-phone like") sections that allow you choose among the different parts of the application (which will be opened during the login page). It is a Menu like interface of the application.
    - Data encoder registration section: Unlike the others, only a database administrator is capable of registering data encoders to the system, unregistered data encoder shall have no access to the application, too.

- Report generation section: This section help to generate among the different kinds of reporting file formats such as: Statistical analysis, graph, charts, images, pdf with and without barcode, xls, xliml, html, csv…etc. Let us see the sections briefly in short.
- Analyzing section (The key section): This is the key section of the application so that all the inputted data from the database analyzed properly and made ready to be referenced by the web application. After this section complete its analyze, different database tables will be created that hold key information for the investor such as profits of the product to produce, importer information of that product item…etc.
- PDF and printer section: This is another reporting section by which it generates a PDF (portable data format (print on any)), html file format xls file format, xliml file format and csv file format.
- Barcode section, this section stamps a barcode on every page of the pdf. Here we shall note that a person can generate a report with two options, one with barcode and the other without a barcode. Currently the barcode is limited to one type called “Bookland symbology”.
- Pages resize section: This section allows resizing the size of a page to be printed, and is controlled with spin editors.
- Gradient generation section: All the charts shall look nice when perceived by the investors, to make this happen; we’ve used a gradient to be added on the charts. Awesome!

- Chart to Image mapping section: This section maps all the charts generated and rendered for the screen to be mapped to an image file formats with *.png file extensions so that it can be referenced from external applications such as the web application.
- Chart break down section: This section breaks the chart into distinct sections, because usually charts in case of very large amounts of data, get overwhelmed, this in turn disables for viewing by humans.
- Awesome looking irregular shape buttons: This as the name indicates are simply buttons with irregular shape and having professional rendering applied to it, with cool bluish gradients. Example the pulse button, pulses different colors so that people don't forget clicking it some of the time.
- Change setting section: This section allows changing settings of the interface such the theme (The application has more than 14 themes for the Metro), change the database configuration setting such as path to the database, etc.
- Print Grid view section: prints the overall grid view into the required file format.
- Desktop alert: Usually, this Message alert notifies something that currently happening on the background such as if the connection fails or succeeds, this section exits by changing the opacity to transparent.
- Performance alert: saves the users comment. (Enabled with five stars only, no text).

- Product Classification section: This section unlike the other section, is one of the major section which help us categorize every of the imported product. The products to be imported are of two types, they are either services or products. We planned to make our product classification follow standards: such as GPC (global product classification) which uses GS1 standards. GPC is part of the GS1 standard package for Global Data Synchronization Network (GDSN).

The GS1Global Product Classification (GPC) is a system that gives both sides of trading (buyer/seller, importer/exporter) partner relationship a common language for grouping products in the same way .It ensures that products are classified correctly and uniformly, everywhere in the world. The term "product" project refers mainly to physical products; however GPC is expanding into services as well.

GPC has the following major advantages:

- Support buying/ (import/export) programs by allowing buyers (importers in our case) to pre-select groups of applicable products;
- Provide a common language for category management, thus speeding up reaction to consumer needs;
- Be a key enable of the Global Data Synchronization Network; and
- To be a Pivotal classification system between the information exchange parties.

The foundation of GPC is called a "Brick;" GPC bricks define categories of similar products. Using the GPC brick as part of GDSN ensures the correct recognition of the product category across the extended supply chain, from seller to buyer. Bricks can be further characterized by Brick Attributes and attribute values.

Currently, the Project members already inserted more than 20,000 “Bricks and/or Attributes” of every product into the system. The latest software technologies for the classification and making the interface attractive were used, such as the TreeGX and Knob controls. This section of the system is called “Easy product Classification tree.” The system implements the following major sections:

- Knob control section: This section implements four types of knob controls with different styles but same function. Most usually the knob controls in our system are used for magnification of the treeGX product classification. This section also supports the theme of the container.

- TreeGX layout section: This section changes the layout of the TreeGX, it has got 5 different options for its different layouts, the section also supports different themes, this section is more appropriate when the attributes of the product has got long name.

- Coloring section: - Changes the color of the node link to the desired colour.

- The Spacing section: gives two different kinds of spacing: horizontal spacing and vertical spacing; they can be controlled with spin editors.

- Node section: All the nodes in the TreeGX product classification have got a professionally rendered look and feel with same functionality. Every time, double clicking a single TreeGX node copies different information about the node, then filtered appropriately for another application and copied to the clipboard (Section of the RAM). Any application then can paste the prepared text/image from the RAM for its application.

- Investor classification in Tree GX Easy Product Classification Section: The product classification in the Tree GX system can help classify different kinds of studies for investors according to their capital. For example, a wealthy investor may want to have a study made on generally higher level. For example, electronics company. However, another investor with small capital may wish to invest in some part of the electronics company, for example s/he may wish to invest on one of the electronics part 'Lamp', The Tree GX help to make a study classifying 'investor types' from the point of view of theirs capital.

- Verification section: If the RAM works correctly and if there is no lack of Memory, then a message will popup showing the success and other information.

- The database section: To make their application interact faster than ever, the team members chose our database rely on MySQL. MySQL has the following advantages:

    - It can process more than one billion queries in less than a minute;

- It is platform independent;
- Very easy to troubleshoot and fix problems; and
- It can be migrated easily to Oracle/MsSQL database (if required)..

One of the critical sections in this database system is the image field. To make the security and recovery better, the team members used both the blob type and the file path methods for storing the images in the database. The database uses MySQL Workbench as an IDE for its application.

- Networking technologies: The team members used both LAN WAN systems in the Project; the routers to be implemented are one of the latest, highly secured all in one routers called for known as ‘Fortinet’.

REFERENCES

As explained earlier in the research methodologies, all the problems explained earlier are directly stated from the parliament, though other types of foreign media exaggerate things without having truth in them. So, most of the data collected were from the Ethiopian Parliament (90%) and the others were from different media (Internet/statistical agents/radio/TV/different books), etc. The latest technologies and software could also be found googling it in the Internet with Google and Yahoo.