

Business Plan of a Public Company for design and creation of software and services NTIC (New Technologies of Information and Communication) of the UTN University

Daisy Gabriela Valencia Altamirano
Universidad Técnica del Norte
Ibarra, Ecuador
dgvalencia@utn.edu.ec

Abstract—This project is the implementation guide of the public company to offer Cloud Computing services, incubator for technology-based companies and the Office of Technology Transfer, with the diagnosis of the initial situation and market research where some results were for part of a survey conducted online technology companies in the province of Imbabura the needs of the target market are met, and the means are there untapped UTN; Technical study on the structure of the technology implementation appears to provide the services of the company, in its financial study demonstrates building roads, in the EIS states that support Cloud Computing provides the environment to be a green technology.

Palabras Clave — Cloud Computing, Incubator for companies, office of technology transfer.

I. INTRODUCTION

Technological progress that the world is living in this era has evolved technologies that interest is basically being efficient and reduce the cost of investment. Current technology has allowed equal access to knowledge, which is part of the progress of each people thus ending the gap between developed and developing countries, to become equal with the same capacity, innovation and others.

Ecuador is in the process of technological development as the government of the Citizen Revolution implement democratize telecommunications service and the Mintel (Ministry of Telecommunication and Information Society) is leading and running the Ecuador Digital 2.0 strategy, which is based on the Plan of Universal access and Digital Readiness, the National Plan of Government Online and the National Development Plan broadband in Ecuador.

The annual report of Information Technology and Communications (ICT's) 2012 INEC based on the National Survey of Employment Unemployment and Underemployment - ENEMDUR - National Total discloses that 31.5% of Ecuadorians use the internet, with growth of 3.7 compared to 2011, of people who use the Internet, 3.8% of people use the internet for work, while 28.2% as a communication channel and 36% as a source of information.

The technology is closely linked to the change of the productive matrix that gives the added value for the development of enterprises, institutions and other productive entities that are part of the economy. According to the "Survey

of Activities of Science, Technology and Innovation (2009 - 2011)" economic sectors that are innovating are: 27.7% in the services sector, 20.31% of the manufacturing sector, the commercial sector 9.72% and 1.15 % of mines and quarries, in these sectors was 14.36% innovation software and hardware 14.31%.

Cloud computing is a technology that has 3 services: IaaS (Infrastructure as a Service), PaaS (Platform as a Service) and SaaS (Software as a Service). This is booming worldwide solutions because it gives greater efficiency and lower cost of investment in technology. The Ecuador is in this "technological wave" in the vast majority as consumers, large industries such as Google, Amazon, IBM, Microsoft, Salesforce and others give the service of the 3 layers worldwide, but we are in a reality that needs in each country and / or region is different and niche market opens here in Ecuador to provide this service.

Ecuador has according to the Superintendency of Companies with 17,843 micro, 10,487 small enterprises, 4970 medium businesses and large enterprises 2386 to 2012; medium and large companies have the capital to invest in technology infrastructure either hardware or software, but the problem lies in the micro and small enterprises that their financial statements do not include the ability to invest in technology, considering that the sectors innovated only the 14.36% and 14.31% invested in software and hardware respectively, that technology has a high value.

There are some companies in Ecuador leading Cloud Computing service as CNT, Telconet, New Access, Intergroup, Winnercorp, Ecuador Cloud; but not limited to providing 3 Service Cloud (IaaS, PaaS, SaaS) together in these companies. The Ecuador in recent years has been increasing in enterprises either by chance or necessity, given by the GEM 2012 report on early-stage entrepreneurial activity, Ecuador is the first in Latin America with 26.6% and followed by Chile with 23% . A high percentage of entrepreneurship programs are low financial statements and limited investment capacity. Lately in Ecuador is developing technology startups source of income for many young innovators and entrepreneurs, but a difficulty presented is the technological investment, both for development and for marketing their products or services.

Investment in technology infrastructure state buildings are, municipalities, provincial government ministries, secretaries and other government buildings, is very high because you must have good availability and performance of processes each unit

takes to serve the public; This high investment affects performance of other works that need the Ecuadorian people, thus having a problem of priorities in project implementation.

A. Justification

The idea of transforming the fixed cost of investment in IT (Information Technology) into a variable cost that depends on consumption, is very attractive both for public companies, government departments, large private companies and SMEs. It is also to be updated in both software and hardware without having to make a large investment in technology change. And the demand for mobility and access information anywhere are important for better job performance. The Cloud Computing offers this and much more, is technological change, and also helps to a change in the operating model of enterprises.

To improve entrepreneurship and innovation an important part is the added value and virtually every innovative technology projects is what makes the difference, Ecuador according to the "Global Competitiveness Report 2013- 2014" the pillars that have score more Innovation are low (score 3.4 that locate at position 58 in the world ranking) and availability acceptance and use of new technologies (3.5, position 82). With the implementation of Cloud Computing to help these SMEs and startups that are most enterprises, could improve the productivity of these companies, by not requiring greater investment in technology but a service that fits your technology needs. Most technological resources they need are software management payroll, human resources, purchasing, CRM/ sales management, accounting and finance, project management and others; and hardware containing this software but as we grow as a company, grow growing needs and investment capital for technology and Cloud Computing fits this style of business.

Rackspace public a study conducted between businesses and entrepreneurs in the US and UK on the benefits of Cloud Computing giving these results: 88% of companies said they had saved money and improved the efficiency of its infrastructure, 56% said they had increased proceeds from the | company, and 49% believe it has helped you grow your business. This reality is not far to Ecuador because business needs are the same, to generate more revenue with less investment, and this is another advantage of Cloud Computing.

According to the study by Deloitte in 2010 -What Cloud Computing Means for business, and how to capitalize on it| companies that are committed to the implementation of technological models based on Cloud Computing acquire a set of immediate operational advantages in the deployment and consumption of technological services needed for your business: cost efficiency (you can get to achieve a saving of 50% of it costs from the traditional model), the investment adjustment, agility in deploying new processes, products and services and targeting of resources in the processes of company value.

The study "Saving money through Cloud Computing" by the Brookings Institution research center in the United States says that thanks to Cloud Computing governments can generate savings bordering percentages between 25 and 50% of IT spending. In late 2012, the European Commission adopted the European Cloud Computing Strategy to facilitate the adoption of this technology in all sectors of the economy including in the public sector as the engine of productivity growth and

employment. In Ecuador have generated some approaches to the implementation of an Electronic Government in some state institutions, processes that are possible through a change in the conception of the state model, the e-government is developing implementation in the Ecuadorian Government has the objective to bring the government to citizens, encouraging their participation and collaboration, cloud computing enables sharing with the public updated information can unify all computer systems that are currently single and tailored to their needs, centralized maintenance facilitates management and allows access from anywhere in the country.

Want to develop technological innovation and start anything because fear young people do not have a support guide to take your idea, but with the Cloud Computing service specifically PaaS is a platform for technology entrepreneurs have as a source of development work their applications to the cloud and mounting him to be a service for other users.

The low cost of cloud computing and its universal availability, can help level the level of education; is possible to develop a curriculum for all schools in the country, providing all students have the same experience in education. The plans that the government is making to improve the technology implementation in schools (computers, internet, etc.) is a good start to open to current needs; together with the Cloud could allow teachers to download curriculum, monitor academic records of students transfer data safely, without building a system of hardware and software support to connect them.

It is a supply chain that of giving a service of Cloud Computing the country, first service IaaS (Infrastructure as a Service) which is charged systems, the PaaS (Platform as a Service) where you can create computer systems and SaaS (Software as service) where you can use these computer systems in order to streamline and improve the productivity of small public or private companies, big or, or personally. It is a way to generate productive employment in all areas of the country, and also to improve production. Companies are in a stage of technology transfer well to have higher profitability or because advancing to the needs of medium. Whatever the main reason that forces companies to implement ICT in their establishments; the state, technology companies, among others have an obligation and an opportunity to meet the demands and needs of this market.

B. Objectives

1) General Objective

Develop a business plan for the creation of public company design and development of software and provision of NTIC (New Technologies of Information and Communication) at the UTN University.

2) Specific Objectives

- Make market research to determine the level of acceptance of Cloud Computing.
- Make a diagnosis of the current situation of the use and implementation of ICT in the province of Imbabura, and developing software that generates the Technical University North.
- Make a market study in the province of Imbabura on needs related to ICT services for public, private companies, GAD (autonomous governments),

educational institutions, NGOs (nongovernmental organizations), etc.

- Make a technical study of the creation of the public company for the design and development of software and provision of ICTs.
- Make a financial study of the creation of the public company for the design and development of software and ICT service delivery.
- Make an organizational study for the operation of public company design and development of software and ICT service delivery.
- Make an environmental impact of the creation of the public company for the design and development of software and ICT service delivery.

II. DEVELOPMENT

The public company is focused on two main areas:

1. Servicing of Cloud Computing (SaaS, PaaS, IaaS).
2. Create an incubator for technology companies

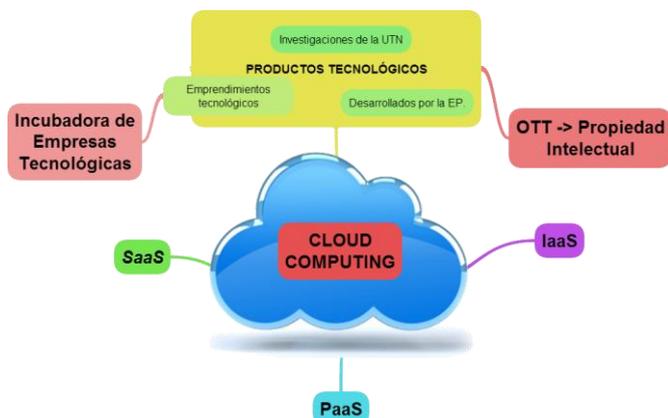


Fig. 1. General structure of Public Enterprises

A. Market Study

16132 establishments of the universe The sample for analysis using software and ICT services in the province of Imbabura is a survey of 375 randomly selected establishments.

- The 57.15% need to manage your business from anywhere in the world at any time.
- The 79.12% computer needs to interact with customers from Web applications.
- The 82.42% want to reduce costs for added utility.
- The 82.42% want to increase sales by having a better interaction with customers.
- The 71.43% want to have comprehensive tools to increase and improve information for good business decisions.
- The 67.04% expect to implement technology to optimize working time.
- The 83.51% wants to improve their marketing strategies making known to the company by Web 2.0.

- The 81.32% focused information you need to improve ways of handling data from their suppliers and customers.
- The companies generally need to have their presence in the Web 2.0 to take advantage of all the benefits that this has; but the province's 93.41% do not have a website and 86.81% did not use the hosting service;
- Software solutions serve to improve the management of enterprises and yet the 60.44% has not implemented any computer application and 89.01% do not have a data center to store the information generated by these applications.
- The 90.11% want to hire technological services such as cloud computing, of which:
 - The 24.54% hire SaaS (software as a service).
 - The 14.66% hire IaaS (Infrastructure as a Service).
 - The 60.80% hire SaaS and IaaS together.

B. Cloud Computing

Separation of Responsibilities

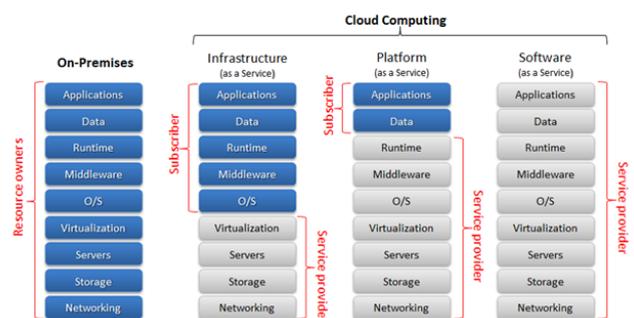


Fig. 2 Separations of Responsibilities

SOFTWARE AS A SERVICE (SAAS)

The customer has the ability to use applications provider in a cloud infrastructure, meaning "cloud infrastructure" a collection of hardware and software that allow the existence of the 5 characteristics described above for a "cloud".

PLATAFORM AS A SERVICE (PAAS)

The customer has the ability to develop the infrastructure of cloud applications themselves or others. The customer has control over applications and configuring them, but not the rest of the infrastructure, such as: network, servers, operating systems, storage, etc.

INFRASTRUCTURE AS A SERVICE (IAAS)

The customer has the ability to use processing, storage, network and other resources to implement arbitrary software, which can be from operating systems to applications. The customer has no control over the infrastructure of low cloud, but has control over operating systems, storage and applications developed or implemented. You may also have limited control over network components, such as firewall for own infrastructure.

a) Implementation

For the implementation strategy of cloud computing guide frame Cisco Domain Ten, ten crucial that specific domains applies.



Fig. 3 Strategy of Cloud Computing of Cisco Domain Ten.

To understand quickly and easily which are key to the concept of cloud computing, we resort to a number of key features that differentiate it from traditional IT systems:

- Pay per use.
- Abstraction.
- Agility in scalability.
- Multi.
- Self request.
- Unrestricted access.

C. Incubator for Technology based Companies

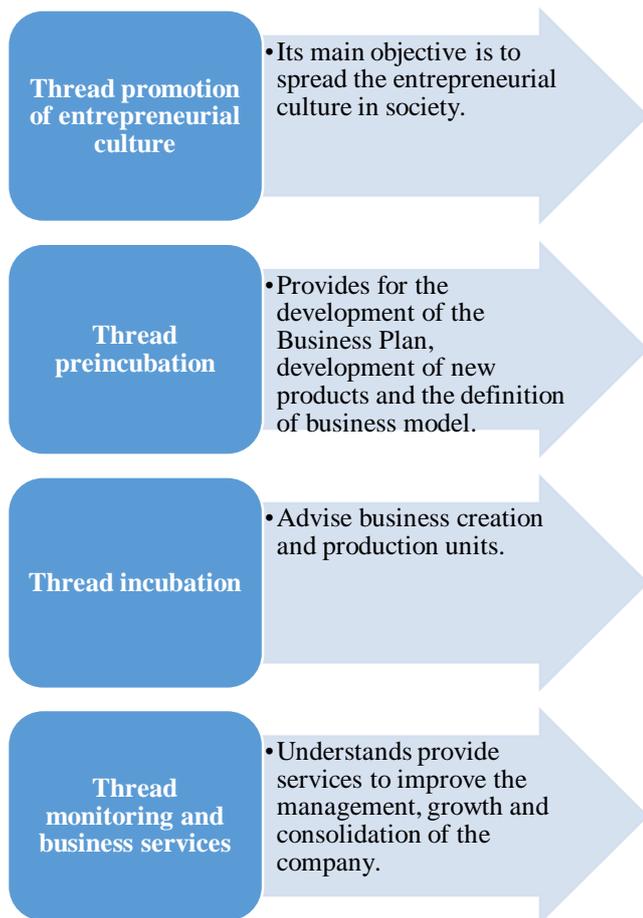


Fig. 4 Process the incubator companies

D. Marketing Strategies

1) Distribution Strategies

The distribution of cloud computing services and incubator services technology companies will sell directly to the customer considering the following aspects:

- Provide software and technology services and entrepreneurship covering the needs of customers.
- Identify market segments according to the extent of potential investment.
- Meet enough information to companies interested in acquiring solutions to offer.
- Professionally advise the client in the process of contract for the execution satisfactory to both parties.

2) Promotion Strategies

Position the company with promotional strategies to be released on the market with the following methods:

- Participate in software development events, university student fairs, trade shows, conventions technology economy, entrepreneurship, law, among others.
- Use the referral program with enterprise customers
- Conduct seminars technology, entrepreneurship and productive economy improvements of customers.
- Exploit promotion services offered by web 2.0
- Establish strategic alliances with companies that handle high levels of information.
- Contact and visit customers and potential customers to offer products and services that the company has.

3) Communication Strategies

The advertising deal with the media in economic sectors and population of the province of Imbabura in order to know the products and services to offer the company, will be:

- Implement 2.0 marketing through social networking, website, blogs, email, wikis, text messages, and others.
- Use traditional marketing through advertising in newspapers, billboards, commercials on radio and television.
- Contact with key IT, economics and technological enterprise with direct marketing.
- Use an electronic portfolio that is available on all platforms with products and services.
- Make use of direct contact with customers through demonstrations, lectures, exhibitions and proofs of concept.

4) Service Strategies

Service strategies to provide quality assurance of products and services that the company offers its customers will be focused on meeting the investment and provide optimal service as a company, using the following:

- Work with quality standards and technology.
- Having the best talent specialized in each of the areas of services and products the company offer.
- Create and maintain trust between customer and enterprise solutions products and services proposed.

- Increase the use of technology in economic processes and daily activities to generate greater utility customers.

5) *Sales Strategies*

The sales strategy proposed to develop the business activity is defined as follows:

- Investigate the needs of customers.
- Create opportunities from innovation to implement customers.
- Sharpen potential customers to understand their needs and expectations.
- Use the trend of digital marketing.
- Provide a pleasant shopping experience and fast service.
- Apply the custom for sale with human talent specializing in sales and technology.
- Make use of program referrals.
- Differentiate the supply of services according to the target market and its trends.

III. CONCLUSIONS

- Acceptance of hiring the services of Cloud Computing by the economic sector of the province of Imbabura is 90.11%, the market study defined the offer will cover all unmet demand and marketing strategies same.
- Education in entrepreneurship must evolve in the province of Imbabura and education centers mainly at the Technical University of North so that the educational tools contribute to the management of sustainable ventures.

ACKNOWLEDGEMENTS

The Technical University of North where it is expected to implement this project, the supervisor Econ. Winston Oviedo.

REFERENCES

Work prior to obtaining the title of engineering degree in computer systems: "BUSINESS PLAN OF A PUBLIC COMPANY FOR DESIGN AND CREATION OF SOFTWARE AND SERVICES NTIC (NEW TECHNOLOGIES OF INFORMATION AND COMMUNICATION) OF THE UTN UNIVERSITY"
 Author: Daisy Gabriela Valencia Altamirano
 Director: Econ. Winston Oviedo