

Other Way of Making Business: A Virtual e-Commerce Community / CVN Platform

Roberto Naranjo, Jorge Moreno, Luz Marina Sierra, Martha Mendoza

Researcher Information Technologies Group (GTI), University of Cauca, Sector de Tulcan Popayan, Colombia South America

Abstract. This article describes the current problem in the business environment from the department of Cauca – Colombia (South America), and the proposed solution called Project CVN (Spanish initials) “Business Virtual Community - for the department of Cauca - Internet Commercial Platform or BVC”. Based on a markets research, the architecture of the added value conceived by the project is described; these values support advertising, collaboration, B2C, and B2B, activities framed within the virtual environment of the community. Below, the business model proposed for the community and the logic architecture of the software is described. Lastly the experiences and the learnt lessons throughout the implementation of the project are exposed.

1 Introduction

CVN is a Research [12] University [1] and Enterprise [4] cooperation initiative, which adapts the IT (Information Technologies) to the specific commercial needs of the department of Cauca (Colombia). Three aspects of the problem stand out: firstly, the lack of the associability and collaboration among the enterprises; secondly, the distance between customer and enterprise on account of the deterioration of the communication channels, and finally, the unawareness about the advantages of the use of the IT [1]. There are similar initiatives in Colombia, among others, such as: Plaza Orbita [15] (Orbital Market) that attempts to promote products and services of the city of Medellin (Colombia); De Remate [6], Latin-American leader selling products through auctions, and TAMPU [7] focused on promoting the tourist image of city of Popayán and department of Cauca region (Colombia). Facing the mentioned initiatives, CVN proposes a business concept that brings together the region enterprises, through a virtual environment that offers added value services directed to the advertising, the B2C (Business to Consumer) and B2B (Business to Business), as an alternative to the suggested problem. The CVN will benefit cultural and technological conditions that motivate the associativity and collaboration among enterprises, as well as the formulation of strategies for the promotion of products and services that benefit the effective approach of these enterprises with their customers.

2 Project Development

CVN has been developed as a project in different stages, from the conception of the research idea, going through the markets research, the elicitation of the requirements and the harmonization of the service outline, up to the design of the logical architecture of the software, the business model view and the sustainability – continuity strategies. These stages are described as follow:

2.1 Markets Research

The carried-out markets research intended, first to identify and quantify the regional and national supply - demand over product-services supported on the CIT [9] through the *CVN*, and second, to establish profiles and entrepreneurial tendencies, that allows identifying opportunities and threats of the environment with the purpose of designing commercialization and sensibilization strategies of the transactions through the Internet.

2.1.1 Hypothesis

The following hypotheses were proposed for the markets research:

1. There is an unsatisfied Internet service and E-Commerce demand in the department of Cauca.
2. There is a lack of knowledge of the business, opportunities, and risks derive from the commercialization through Internet in the department of Cauca.
3. There are limitations and/or technical-economical barriers in the department of Cauca that oppose the commercialization through the Internet.
4. Inexistence of Internet integral solution offers and electronic commerce in the department of Cauca.

2.1.2 Execution

The critical needs of information identified to validate the hypotheses during the execution of the markets research, were:

1. To validate the execution of the project with the evidence that there are enough enterprises which request an E-Commerce alternative such as *CVN*.
2. To identify the treats and opportunities of the project from a study of the current use of the CIT (Communication and Information Technologies).
3. Finally, to estimate the supply of products and services and its possibilities of commercialization on a national or international market.

2.1.3 Technical Specifications and Sample

The complete sample consisted on productive enterprises and associations from the department of Cauca with a regional, national and international coverage. The sample consisted on 54 enterprises of 12 different business areas. The type of sampling was “Non probabilistic”.

2.1.4 Conclusions of the Markets Research

The conclusions of the research, allowed the designing of the service portfolio and the elicitation of the technical and functional requirements of the *CVN*. The markets research has focused its study and subsequent conclusions on aspects related to the Internet, specifically: use, experience, problems, shopping, sale, associability, advertising, interest, and/or conditions of entrepreneurial participation in the execution of *CVN* project. Here, here are some of the main conclusions found:

- The enterprises need a technological platform that permits the association among them.
- The enterprises guess that the *CVN* is an important E-Commerce project that will permit them to offer an integral solution of products at the costumers and advertising through the association among the entrepreneurial members of the community.
- Increased sales, improved knowledge of the market, improved customer service, achievement discounts by amount of purchase, among others are the main reasons that the association of their relationships will bring to entrepreneurial members of the community.
- The *CVN* added value services platform will allow the entrepreneurial members of the community to promote and to sell their products and/or services on a national and/or international market.
- There are favorable conditions for the execution, continuity, and sustainability of the *CVN*, in each one of the aspects mentioned above.

3 A Business Model

The business model [11] of the *CVN* relies on two basic parts: A service model [9] and a sustainability model. Together, they will allow the start up of the *CVN* as an E-Commerce platform. These two concepts are explained briefly below.

3.1 A Service Model

The service model is conformed by three components: Publicity and collaboration component, B2C Component and B2B Component.

3.1.1 Advertising and Collaboration Component.

Also called “*Advertising and Collaboration Virtual Environment*”, it is responsible of supporting the approaching between the enterprises and their costumers through stimulus strategies related to the promotion of products/services and the cooperation and information interchange among the enterprises. The main on-line services that this component offers are: catalogues of products and services, personalized consumption profiles, search engine, adds, information about events, supply and demand of products and services, information managing, and chats moderated by experts.

3.1.2 B2C Component

Also called “*B2C Virtual Environment*”, it is responsible of supporting the communication channel between costumers and enterprises, it provides the following on-line services: Shopping Cart, Information recovery and analysis according to the customer’s shopping habits, and auctions-drop/auctions among users of the community. *CVN* will offer an evaluation of the quality for every service provided.

3.1.3 B2B Component

Also called “*B2B Virtual Environment*”, it is responsible of supporting the cooperation among enterprises with the purpose of promoting a higher power of the entrepreneurial negotiation, the acquisition of better prices through on-line value services, the addition of the supply/demand of products-services and finally, provides commercial information from Popayán.

3.2 Sustainability Model

It defines the valued cost over the provision of the services of the *CVN* that will allow in a long term, to guarantee the sustainability of the community (over five years). Two income sources are proposed: the first one consists of memberships that are obtained by those people or customers whom interest is to actively participate in the *CVN*, and the second one consists of the selling of added valued services that through the profit of the commercial information provide the enterprises with competitive advantages that impulse the capacities of negotiation and communication. *CVN* proposes 3 kinds of memberships for the users according to their needs. These memberships have been defined according to the identified needs in the markets research (see Number 2.1).

3.2.1 Free Entrepreneurial Membership

This one allows access to the *CVN* platform for the entrepreneurial members of the community, in order to show them basic services such as: yellow pages, Entrepreneurial Webpage, search about products and services of the *CVN*, participation in auctions, and drop auctions, among others.

3.2.2 Standard Entrepreneurial Membership

This one allows to the entrepreneurial members of the community, to have access to added valued services such as: electronic chats lead by specialists, Evaluation information gathering that the Customers do about the enterprises on aspects related with: Products and Services, client service, fulfillment and support post-selling; configuration of integral solutions of services for costumers, among others.

3.2.3 Plus Entrepreneurial Membership

Additionally to the free and standard subscription services, this one includes on line support, addition of the supply/demand service for major suppliers and customers,

configuration of integral solutions of services for costumers, and inter-entrepreneurial purchasing orders value, among others.

The second sustainability source, relates to the selling of the added value services such as: advertising (Banners among others), branding, direct and crossed marketing, promotions and customers fidelization strategies that are the result of applied data mining strategies to the CVN platform. Having in mind the offered services and the entrepreneurial interest in participating in *CVN*, a presentation of the subscriptions behavior in the first year (see fig 1) was carried out as well as a projection of the community utilities in the first five years (see fig 2), in this one we can see that it is evident that in the two first years the community does not present utilities due to the high initial costs that implies to start it, however the outlook improves considerably, after the second year.

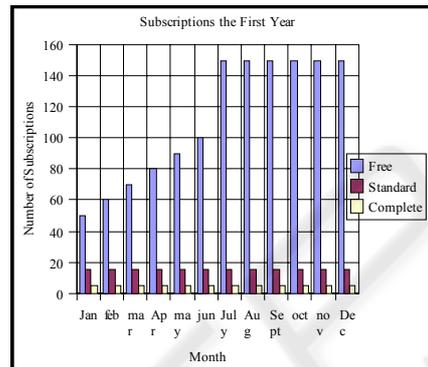


Fig. 1. Number of subscription for the first year

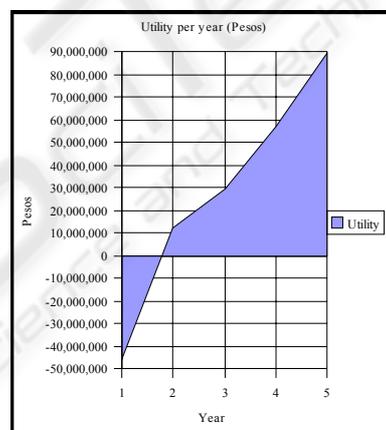


Fig. 2. Five years forward

4 A Software Architecture for the CVN Platform

CVN offers a technological platform that permits to support the services model

mentioned above. Fig.3 shows the logical architecture of the CVN, (it was modeled using the UML Language [16]). This diagram specifically shows the domain layer (following the Application-Domain-Services Architectural Pattern [8]). In this paper we only explain the main software classes that implement some services in the virtual environment of the CVN platform, such as: product/services catalogue, shopping cart, orders, subscriptions, stands, among others.

4.1 Access Control Package

The main purpose of this one consists of providing all those services related to member's access control rules e.g.: user accounts creation and its maintaining, CVN's services assignment based on a membership model and other commercial considerations.

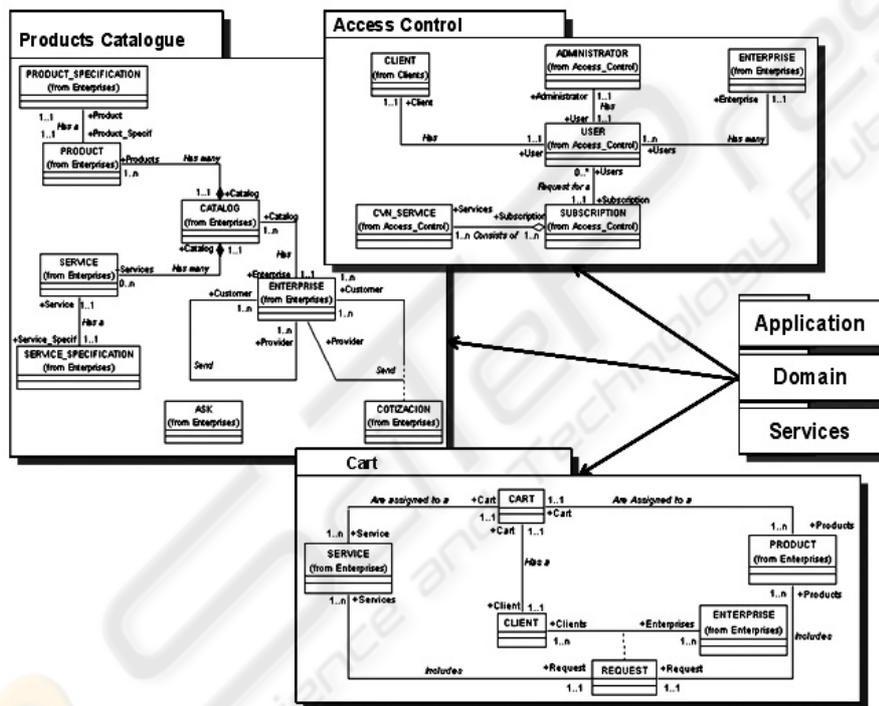


Fig. 3. CVN software architecture

4.2 Shopping Cart Package

The main purpose of this consists of providing all those services related to remove and store items (here are products and/or services) from and to the shopping cart and the buy order making based on the shopping cart content and others.

4.3 Products and Services Catalogue

The main purpose of this package consists of providing all those services related to facilitate the search and retrieve of structured information from the products and services catalogue, making products and services requests and getting prices, too.

5 Conclusions

Despite the difficult conditions of violence and ground communication in Cauca, *CVN* proposes an alternative concept of promoting and commercializing the products and services in Cauca, encouraging, at the same time, through added value services, the asociativity and collaboration among entrepreneurial members of the community, profiting the initial conditions to consolidate, throughout a virtual environment, an agreement point among enterprises and customers, and finally promoting alternative communication channels. From the Basic aspects in the advance and development of *CVN* outstands the markets research that allowed dimensioning the expectation of the services that had to be offered to the community; at the same time, it was outlined the strategy of releasing them. Further more the *CVN* has conceived the mechanisms of sustainability and its future regulation in the frame of the Colombian legislation during its start up.

It is important to emphasize the technological support that the CIT offers like support (internet, communication protocols, standardization, software development tools, among others) to the CVN and the maturity level that CIT has at this moment; in addition, there are very good software development tools such as Microsoft .NET Framework and IDEs that offer many benefits in order to develop this kind of E-Commerce platforms. This technological support, finally allows us to contribute in the fortification of the communications channels between enterprises and between enterprise-costumers.

We hope the CVN platform will be turned into a business alternative to Cauca since it counts with a higher availability of the businessmen of the region, a software tool adapted to the requirements of the Cauca region, and an adequate sensibilization that shows the competitive advantages of the usage of the CIT, will guarantee the successful starting up of the *CVN*.

Acknowledgements

We would like to thank COLCIENCIAS [12], UNIVERSIDAD OF CAUCA [13], CYGNUS TECHNOLOGY ENTERPRISE [4], who permitted the development this project and HEXUM Digital Media [14], for supporting in web design.

References

1. MENDOZA Martha, SIERRA Luz Marina, NARANJO Roberto, MORENO Jorge, CYGNUS Technologies. May 2th 2002. Project “COMUNIDAD VIRTUAL DE NEGOCIOS –CVN PARA EL DEPARTAMENTO DEL CAUCA, PLATAFORMA COMERCIAL EN INTERNET.” - COLCIENCIAS.
2. MENDOZA Martha, SIERRA Luz Marina, NARANJO Roberto, MORENO Jorge, CYGNUS Tecnologías. November 2003. First Technical Report -“COMUNIDAD VIRTUAL DE NEGOCIOS –CVN PARA EL DEPARTAMENTO DEL CAUCA, PLATAFORMA COMERCIAL EN INTERNET.” Sent to COLCIENCIAS.
3. Research Group on Information Technologies GTI. <http://atenea.unicauca.edu.co/~gti/>
4. Corporative Website of Cygnus Technologies – <http://www.cygnus.com.co>
5. Plaza Orbital’s Website - <http://www.plazaorbital.com.co> Accessed December 2003.
6. DeRemate’s Website - <http://www.deremate.com> Accessed December 2003.
7. Tampu’s Website - <http://www.tampu.unicauca.edu.co> Accessed December 2003.
8. LARMAN Craig. UML and Patterns. “An Introduction to Object Oriented Analysis and Design”. PEARSON.
9. VASSOS Tom. 1996. *Estrategias de Mercadotecnia en Internet*. Editorial Prentice Hall.
10. VILLEGAS O, Fabio. Ramirez P, Elias. 2000. *La Investigación del Marketing y su papel en la Gerencia*. Universidad del Valle, Universidad Surcolombiana.
11. NUÑEZ y LUGONES, Fernando Alberto de. 2002. *Modelos de Negocios en Internet-Visión Poscrisis*. McGraw-Hill.
12. COLCIENCIAS. Colombian Institute for science and technology developing. <http://www.colciencias.gov.co>
13. UNIVERSIDAD OF CAUCA. <http://www.unicauca.edu.co>
14. HEXUM Digital Media. <http://www.hexum.com>
15. Unified Modeling Language. <http://www.uml.org>.

