NetStart – Achieving new abilities with ICT

Luís Barreto[1], Alexandre Vilaça[2], Cláudia Viana[3]

[1] Escola Superior de Ciências Empresariais, Instituto Politécnico de Viana do Castelo, Av. Miguel Dantas, 4930-678 Valença, Portugal, lbarreto@esce.ipvc.pt

[2] Exertus - Consultoria em Organização e Estratégia Empresarial, Lda. Centro Empresarial da Maia - Sala 206, Rua Eng. Frederico Ulrich, 3210 - Bloco B - 2°, 4470-605 Maia, alexandre.vilaca@exertus.pt

[3] AEVC- Associação Empresarial de Viana do Castelo, Largo João Tomás da Costa, 41 – 1°, 4900-509 Viana do Castelo, claudiaviana@aevc.pt

Abstract- **NetStart Project is focused on the abilities development, beginning with basic computer science literacy, for access to tools based on the Internet and proceeding according with the established objectives, through a cycle of continuous improvement of its abilities. Project has for base the IPAT - Personalized Itinerary of Technology Adaptation, which in its first phase intends that disfavoured people like unemployed, young people with low qualifications and older actives, to accede to the basic tools of the ICT. In a second phase the IPAT will lead the user to trace its goals of career, using for that, professional profiles adjusted to the work market of and adjusted to the new and emergent types of jobs, in order to take a place in the work market. After the identification of the goals, it will be possible to develop the abilities identified in the diagnostic, considering the knowledge level and the reaching goals, through the participation in training courses using e-learning.**

Index Terms— **abilities, e-learning, professional profiles, training**

I. INTRODUCTION

Northern Portugal region, and specially the region of Viana do Castelo, is facing a real problem. New jobs are emerging and unemployed people and older employees need to develop new abilities. Another problem is the lack of knowledge and use, among this group of people, of the new Information and Communication Technologies (ICT). This region also has a relevant number of young people with very low qualifications that can only get low degree jobs.

ICT allows in a more flexible and easier way, namely through e-learning, to rapidly achieve or develop new abilities. So it's necessary to increase the knowledge and the dissemination of these new technologies among the region we are settled.

II. MAIN OBJECTIVES

NetStart Project main objectives are the development of several instruments that will allow in an independent way people, especially unemployed, young people with low qualifications and older actives, to begin using ICT and then being able, supported in those technologies, to develop new abilities, thus becoming more competitive and capable of facing new career challenges.

NetStart is a project in the EQUAL[1] Initiative, and is funded through the European Social Fund. The EQUAL initiative is a laboratory for new ideas, implemented in and between Member States, to the European Employment Strategy and the Social inclusion process. Its mission is to promote a more inclusive work life through fighting discrimination and exclusion based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

NetStart Project is focused on the abilities development, beginning with basic computer science literacy, for access to tools based on the Internet and proceeding according with the established objectives, through a cycle of continuous improvement of its abilities. . For the achievement of all these goals it was defined the Personalized Itinerary of Technology Adaptation (IPAT). This Personalized Itinerary consists of two distinct phases. The first phase will emphasise in giving the target users the first steps in using and accede to the basic tools of the ICT- the products that composed this phase are a Flyer and a CD-Rom. The second phase, the more important and also the nuclear one of the project, will lead users to trace its goals of career, using for that, professional profiles adjusted to the work market of the region and, also, adjusted to the new emergent job types, in order to take a place in the work market. This phase is composed by a web application and an e-learning platform.

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[1] http://ec.europa.eu/employment_social/equal/index_en.cfm

III. DIAGNOSTIC

All the partners of the NetStart Project have noticed, in the development of their normal activities, that people were worried with their professional development. This was a way of increasing their employment capacity and also their opportunities of better wages. But their concerns, regarding their professional development, were not followed by the organizations concerns and, also, by the market needs, thus, this was leading to low employment and qualification results.

By the other hand organizations, like Small and Medium Enterprises (SMEs) were not able to plan, and also to prepare, in a structured way the acquisition of new knowledge, to set, reach and maintain competitiveness advantages, within their employees.

A question arose: "What is the most suitable model to develop, in a continuous way, training, that could be used by unemployed and employed people, capable of conciliate practice and theory?" This problem was, in an initial phase, formulated in an empirical manner based in the experiences of the partnership. This was afterwards validated through the diagnose phase.

For the diagnose phase was taken in consideration micro, macro and local data. To acquire micro data it was decided to make an inquiry in all the region companies. This inquiry was related to four, distinct, areas: target users/public, Internet access and type of connection (low or high bandwidth), analysis of technological evolution within the organization and evaluation of their training program and, finally, their sensibility to training supported in e-learning.

The macro data was obtained consulting National and European Governmental Organizations as: *Instituto Nacional de Estatística* [1], the National Action Plan for Employment [2] and the European Employment Strategy [3]. Finally, to obtain local data were organized meetings, called focus groups, with all the local entities concerned with all the employment questions. The entities participating in those focus groups were Unions, Enterprise Associations, Regional Associations and the National Employment Institute [4].

It was possible to concluded, after all the data analysis, that: there was a great gap between the people training and the enterprise needs, ICT technology was not fully used within the organizations, unemployed people were mainly in the range of 35-40 years old with great difficulties in using ICT, in the region there was not a strategy for the development of ICT supported training, the region was not aware of the advantages of e-learning and b-learning, the main reasons for the registration of unemployed people in the local employment service [11] are shown in Figure 1 (it must be emphasized that "fired"

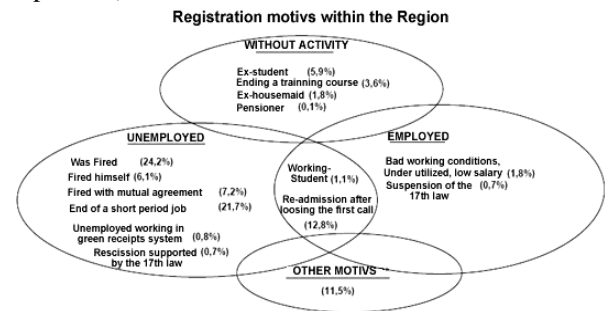and "end of short period job" are the most relevant components).

Figure 1. Main reasons for the inscription in the Local Employment Service.

After the data analysis it was also clear that it existed two, distinct, areas concerning the needs of knowledge and learning. Needs of knowledge and training for the employed and unemployed people and needs of knowledge and training for the organizations.

With all the previous results, it was evident that it was important to put organizations and people seeking, in terms of training and abilities, the same solutions and results and, thus, it was necessary to build a bridge that would be the shortest path between the enterprises and the society.

The NetStart Project was, therefore, organized in a way that could support and develop all the economic tissue in the constant acquisition of knowledge though a technological platform that would be available to organizations, older, unemployed and employed people. This platform would be concerned with the abilities development and the professional orientation, thus, leading to a high employment success rate.

IV. LEARNING PATHWAY DEVELOPMENT

The methodology used in the development of this project had different moments for clarifying and redefining the problems to solve and the goals to achieve. These moments were, mainly, composed of information research and analysis, ideas discussion and evaluation, test and confirmation of its applicability followed by its validation. To, effectively, finish this tasks some project management tools were used.

These were very important moments for the partnership as it was possible, with the help of some SMEs and the target users, to make decisions that guided, in a consistent manner, all the work.

All the methodology used was supported in a constructive process where all the results of the initiatives taken (we can refer the target public involvement) would contribute to the development of all the products.

Involving the target public was done through the realization of traditional training in ICT initiation. This training allowed us to realize the real difficulties of the target public in ICT utilization. This training was, also,

very important for the development of the first version of our flyer. Two more training courses were done, "How to become a successful commercial" and "ICT for life". These two courses were done in e-learning and with different pedagogical methods, which allowed us to define the best learning and training method for both the companies and the people. These two courses were also important to validate what type of technique, regarding electronic learning, that would suite in the best way the people needs and, of course, companies needs.

Another important moment, in the development of the learning pathway, was the definition of the professional profiles that would guarantee a high level of employment in the region. The definition of those profiles was done in strict collaboration between the potential beneficiaries- organizations and people- which lead us to a group of essential training modules, more adapted to what the companies really needed. This result was very important; with it we were able to simplify all the training developed.

As a way to validate all the work done, and to close the cycle, defining this pathway, the trainees were put, in some of the companies, in a period of real working conditions. Thus, the trainees could, in a practical manner, evaluate and apply all the knowledge obtained during the e-learning sessions.

V.   LEARNING MODEL

As our main target public was a target group with a lot of difficulties, especially in what concerned the use and accessibility of the new training/ learning systems and tools supported by the new ICT, it was important to define a learning model that was able to keep their motivation in high standards.

It is important to mention that a person who does a learning pathway, which drives to a new professional profile, has to do a set of training modules that in a whole are considered a training action.

Thus, thinking in our target public, and after having discussion the results of all the tests done previously, the partnership decided that the learning model should have the following characteristics: each training module should guarantee the acquisition of some abilities needed to the development of some task; each training module shouldn't have a duration superior to 12 hours, this is an important factor essentially to people's motivation; all the content should be able to involve the participants, thus, the referred content should be interactive enough (never interactive in excess); all the training modules should have an initial and ending live session, the ending live session should be used to the evaluation of the trainees; all the sessions should be supported with working techniques (individual work, team work, discussions) that

allow a bigger participation of the trainees. Also, as a way to keep the group of users motivated, it was decided that a Tutor should have an active participation and the language used should be as simple as possible.

VI.   NETSTART PRODUCTS

As mentioned before NetStart Project has two distinct phases- they together realize the Personalized Itinerary of Technology Adaptation - and in each phase a set of tools and products. The following sections will describe each of its products and tools.

A.   First Phase Products- Flyer and CD-Rom

The products that realize this phase are a flyer (Figure 2) and a CD-Rom (Figure 3). The flyer will give all the directions necessary, to someone without any experience in ICT, to start using a Personal Computer (PC) till the stage of inserting and start using the CR-Rom. All the language used within the flyer and CD-Rom is very easy to understand. This is a very important factor as we are leading with low qualification people. So in the end, it was also decided that all the language in the development of the NetStart project would have a special attention, because this would allow that more people used all the tools of the project.

Figure 2.   Flyer

Figure 3.   NetStart CD-Rom.

The CD-Rom consists of several games and tutorials that will allow the user to access, in an independent way, the second phase tool and the e-learning content. The CR-Rom is divided in four main subjects: Knowing better your PC (use of the mouse and keyboard, how o use programs, etc.), the Internet (browser, hyperlinks, search motors), E-mail as an important communication tool (create an email account, how to use e-mail) and how to use NetStart (portal, tools and e-learning platform). All the tutorials in the CD-Rom are interactive and need the user to participate in them. This will allow the user to get all the necessary knowledge in a pleasant and simple manner.

B.   Second Phase Product- Diagnostic platform

This phase is supported in a web based application. In this application, developed within the project partnership, the user, after an initial registration, selects the job functions were, already, has abilities, then regarding those job functions has to select what tasks/ roles has skills. Going on, the user has to tell the level of ability that has for each task. For simplifying all the process it was previously defined three levels: simple, medium and advanced. Then the user has to select how it will be proved those levels, and he can prove it in a documental manner, for example with a certificate; his employer can also prove its abilities levels and he can also ask for a diagnose test. The next step will make a match between the profiles and needs found in the system and the information introduced by the user. For a better reading and understanding, a graphical representation is used to show how approximate is the information introduced by the user to the profiles needed or saved in the system. For finishing all the process, the user selects a profile that satisfies his goals for a career and the system will return his Personalized Itinerary. The itinerary will inform the user what training he needs to entirely satisfy, considering as a starting point his actual abilities, that professional profile.

The web application stores all the information introduced by the users and keeps track of all changes occurred, and, as needed, users can access and update the information introduced. Thus, the web application retrieves what activities - namely training courses, proof of task/roles levels - are done and what have to be finished.

The web application can also be used by employers or organisations to submit and introduce specific needs, and to manage the training needs within their organisations. The development of this web application was preceded by the definition of a functional analysis (Figure 4). For the development of this functional analysis was important the participation of the target people, the technicians and also the partnership. They together worked as a whole, thus satisfying all the requirements and defining a tool that it's important to increase the competitiveness of our region. The functional analysis was supported in the work of [5].
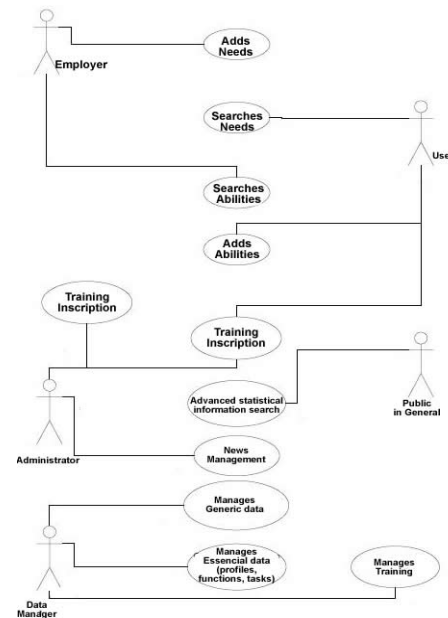

Figure 4.   Functional Analysis.

When the user has his Personalized Itinerary, he can through the participation in online training courses reach the goals and abilities asked by the profile selected- this is the third phase. This phase only depends in the motivation and the needs of the user. It was privileged the e-learning system known as blended learning (b-learning), and it was also defined that all the evaluation would be done physically in a classroom. This is important for the credibility and recognition of the abilities among the employers. The training courses, if chosen by the user, can be done externally, even through traditional training system (physical classroom). After the completion of the courses, through this system, the user will be able to update its itinerary. Such a process allows the user to choose what best suits its interests.
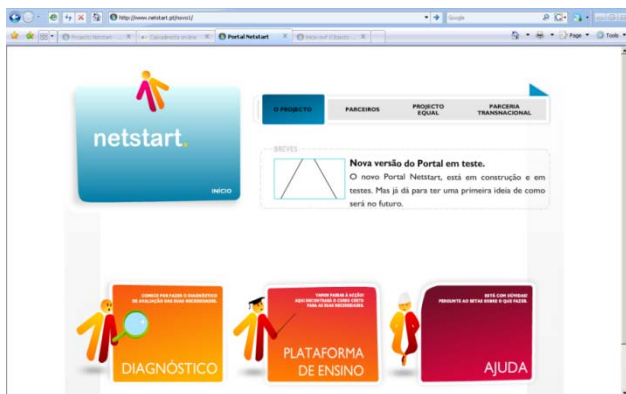
Figure 5.   NetStart Portal.

VII.   CONCLUSIONS

NetStart is a powerful mean of competitiveness improvement supported in abilities development and ICT. These together surely will make the difference and will start changing the training paradigm in our region and possibly in all European countries. Nowadays the traditional training is used, the tools and results of the NetStart project firmly advise that it's time to move on and to assume that training can be more flexible and accessible. All these results will be in a web portal (www.netstart.pt -Figure 5); from here it will be possible to access the web application, the e-learning platform and also relevant information.

NetStart set of tools allow, also, people to increase their ICT abilities. These tools will permit an increase of ICT access and, also, an efficient exploration of all the information and content created and delivered by those technologies.

NetStart web portal wants to be, to all people with fewer qualifications, an open door to the digital world. Its main development characteristics, such as ease of use and simple language will allow a person, with low qualifications, to find their real needs in terms of professional competences and, also, permit this same person to start training, supported in ICT, fully directed to the companies needs.

All the tests done allowed concluding that this model is effective and permit in a quick way the acquisition of the basic abilities to the development of a task/ function. This functionality facilitates not also employment but, and sometimes more important, the integration of any person in a company.

REFERENCES

[1] Instituto Nacional de Estatística, http://www.ine.pt
[2] National Action Plan for Employment, http://www.dgeep.mtss.gov.pt/estudos/pne.php
[3] European Employment Strategy, http://ec.europa.eu/employment_social/employment_strategy/task_en.htm
[4] Instituto de Emprego e Formação Profissional, http://www.iefp.pt
[5] HR Online Inc.: Performance Development Smart Suite: A comprehensive integrated web enabled suite of HR workflow process, (2004).
[6] Confederação do Comércio e Serviços de Portugal, http://www.ccp.pt
[7] Lavoro Regione Emilia-Romagna, http://www.provincia.bologna.it/lavoro/
[8] Servicio Basco de Empleo, http://www.lanbide.net
[9] Catálogo Nacional de Profissões, http://portal.iefp.pt/portal/page?_pageid=177,139188&_dad=gov_portal_iefp&_schema=GOV_PORTAL_IEFP&id=4
[10]   International Labour Office – Genève, Recommendation concerning Human Resources Development: Education, Training and Lifelong Learning, Recommendation 195
[11]   IEFP: Relatório Trimestral, Evolução e Situação dos Mercados Locais de Trabalho, 2º Trimestre 2004.
[12]   Programa Operacional Temático Potencial Humano (FSE) – QREN, http://www.qren.pt/item3.php?lang=0&id_channel=34&id_page=203
[13]   TRICTSME- TRaining of Information and Communication Technologies for Small and Medium Sized enterprises, http://vegnet.beds.ac.uk/trictsme/index.htm