Project from LiveLab'12:

My neighboorhood, my home
(support search tool for home buyers / renters)

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Context:

In LiveLab'12 (e-planning doctoral program structural course) we were challenged to develop a tool for a social need.

Residential housing market have an intrinsic supply / demand disequilibrium: facts such as house nature (a unique, durable and scarce good - linked with single soil and location characteristics) or types of market agents intervention (e.g.: for investment or for own residence purposes) are responsible for imperfect market operations. Furthermore, market agents have a desynchronized participation – this is more relevant for buyer's actions.

Because these markets constrains, house search are the most complex and expensive phase in transaction process. Such as other imperfect markets, lack of information between market agents is one of the most important sources of problems. These are amplified by the market intermediaries (persons and services) that dominate transaction process: those services / person are indispensable in assess supply and demand match. Unfortunately these agents have strong incentives to deliver deficient information to their clients: information retains enabling them to maximize its gains.

In Portugal, only in last two decades real estate market has increased professionalization at housing market intermediation level. Indeed, in 90's had come the first legal regulation framework for these activities. However, implemented laws were very weak and its focus was in legal security of transaction. Furthermore retained market information remains a problem today.

However, many changes occurred: new information and communication technology had been a revolutionary role, leading a new market model. New services didn´t look forward to a better market efficiency. Instead these services led to gains of strong players, such as:

- New technologies are used in traditional approaches, such as expansion of advertising platforms for housing lists with limited search options for buyers / renters.

- (new) Technological tools designed only for seller's needs (ERPs, Digital Databases, etc).

- Expensive (inexistent?) decision support tools for individual buyers / renters.

- Maintenance of fragmented information accumulated by agents (with high costs for data crossover, which benefits strong / high power market players)

Objectives:

As mentioned overhead, search phase is one of the most expensive processes of transaction. Although users had a lot of different tools to assess this purpose, one specific field of search criteria has been omitted: territorial aspects. Or, more specifically, neighbourhood attributes.

For this reason, my main objective is to develop a tool which responds at this question:

How to find homes that are located in places that most pleases us?

Description of the project:

Using my urban planner background, I designed a tool based on urban concepts and socioeconomic analysis techniques. This new tool had been accomplished to traditional search criteria (like structural house attributes)

To define neighbourhood criteria, I used six key attributes related to urban forms conceptions: Urbanization level, Mixture of uses, Accessibility and proximity, Urban morphology, Backyards, Building typology. For each attribute, I defined a quantitative gradient between two dichotomic (opposite) concretizations. For instance, in mixture of uses, one pole of the dichotomy is totally urbanized spaces. On the other end are spaces where a mixture between urbanized spaces and agricultural / forests land-use co-exists. This is a hopefully way for common users establishing its preferences.

Search tool will have had an interface for users divided in three hierarch fields (reproducing normal search process): First, neighbourhood profile (the new add – value function); second, socioeconomic profile (related with e.g. local of work, school of children, members of family) and third, structural aspects of house profile (for example, type of materials, areas). These entire fields mix user attributes preferences and user attributes restrictions (for example, budget constrains).

Interface collects users profile and submits it in our web service / data base. This service request enables an algorithm to match user profile in classified house database. Previously, individual house profile had been automatically determined using the same measures revealed above when sellers upload it.

Distance between both classifications (user profile and house profile) was measured by a rating formula. Ratings are returned to web interface, where we have a lot of additional information (stats, house facts, supported geoinformation, …).

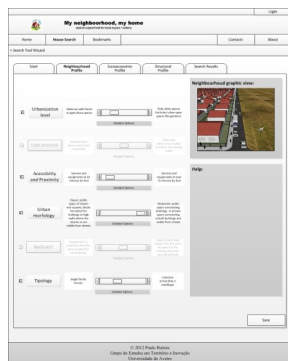These are examples of possible user web interface (fig 1 and fig 2).

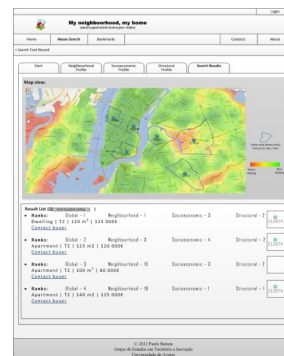**Fig. 1** Example of Interface for user set search profile

Fig. 2 Example of Interface for personalized search results

Results:

There isn´t results yet. Project is ongoing. First operational prototype will be ready at end of July (2012).

Next steps include a brainstorming with actual (and new) partners: research group team, at my university, and team from software company partner. The purpose of these meetings is applying this idea to the real market operations.

Some technical challenges are expected. First, I think it is very important to involve new partners, such as consumer´s association. Other important challenges are related to:

- How we do convince sellers to provide data (house records with consistent and complete information)?

- Who pays service costs? (such as, Commercial model?)

PROJECT:

LiveLab'12 Project

My neighbourhood, my home - support search tool for home buyers / renters

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MultiVector	**Study Group in Territory and Inovation**
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	» Special thanks to DONUT (Drivers Of housiNg demand in portuguese Urban sysTem) research project team;

(others coming soon…)