

The Intelligent MatchMaking Enabler



A world of needs to match

With the growing penetration of Internet based technologies and their application into the communication world, the way people interact with other people has dramatically changed. For the same reason, companies have changed the way they do business.

Every social relationship is based on interests or needs and The Internet offers new and different ways to express and match them. The degree of satisfaction a user gets from a tool depends on his or her knowledge of the tool and the richness of the repository of data available. Search engines and Market Places are the most common ways people and companies satisfy those needs. For instance, in the manufacturing industry, a company may need - looking for the best positioning - to sell its product on the market. A gross dealer needs to find a manufacturer or reseller that can offer him products at the best conditions. Those conditions may vary on different parameters dependent on price, place, quantity and many other attributes related to the product.

In the private sphere, an individual can satisfy his or her curiosity in a direct way accessing a particular service or using a search engine to identify where that service or product is available. Those requests may vary from the need to buy a product to a job opportunity to apply for, or to a person to find.

As knowledge and available services grow, the way those needs are matched has to become more professional and specific every day.



HME (Hi-flier MatchMaking Enabler)

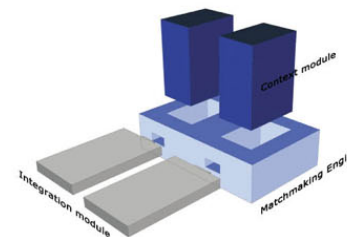
It consists of a highly portable and scalable module, combined with cartridges oriented to its integration on the architectural components in which it is installed and cartridges that allow a highly context oriented matching functionality. The HME suite is based on Intelligent Agents, an innovative technology derived from Artificial Intelligence.

Intelligent Agents can be seen as robots, which can be trained to move autonomously inside an environment and to make decisions which simulate human behaviour in order to pursue their goals. With a graphical interface a user can train an agent, giving guidelines that describe what the agent is and what it has to do. The new agent is launched in an existing environment, that already contains the previously entered agents. The matchmaking can be done in an asynchronous way. Therefore the user can at this point be freed by any task, while the engine is charged with the task of matching the user's agent with the other agents.

When the most intelligent matches have been found, the engine will alert the two owners of the matched agents with a notification.

Match Making Engine

The MME (Match Making Engine) is the core component of the HME. It is an open environment which can be replicated in more than one node. Each node can be enabled to communicate with the other ones. It is divided into 3 layers:



Front end layer

Written using Java 2 Enterprise Edt and JSP. It allows the creation and configuration of agents and their launch in the server layer

Server layer

Using fuzzy logic and neural network algorithms enable agents to be matched. In such a way a solution similar to human decision behaviour can be realized.

Data layer

Keeps and manages agents accessing the DB in a native way.

Context-oriented modules

These modules can be built using the VDK (the first part of the Intelligent Development Kit). They allow users to set precise Match Making rules for every application.

e-commerce oriented modules

Using this cartridge, the environment becomes a marketplace matching Buyer Agents (BAs) with Seller Agents (SAs). In the marketplace, the BAs search for SAs offering what they are looking for and vice versa. Once matched, a notification is sent to the user associated to the agents via e-mail or by SMS. Detailed RFQs can be defined.

generic matchmaking applications

These allow applications to be generalized for different kinds of needs oriented to community services for content providers such as job searches, community support, event management or booking services.

Integration modules

They allow the integration of HME in the existing environment. On the notification side integration modules for E-mail, WAP and SMS gateways are available. Existing systems can be easily integrated using the HDK (the second part of the Intelligent Development Kit) thanks to the XML message engine. Integration with pre-existing databases is insured by an extremely flexible Transparent Data Interchange module.

Affiliation Tool

The Affiliation Tool (AT) is the launcher of new agents into the MME. It allows the data mapping of data already stored in external databases into the HME in a transparent way, especially when those data consist of products to be inserted in a marketplace catalogue.

The AT comes in three different packaging depending on the functionalities it allows: the standard edition, the professional edition and the enterprise edition.

The Intelligent Development Kit (IDK)

The IDK allows the user to build a cartridge for the HME. The user develops the cartridge code, interacting with the MME binary code by means of a set of Application Program Interface (API) functions. It is the instant solution to create custom agent-based applications.

The IDK comes with two versions, depending on the kind of cartridge to be developed:

- i. VDK (Vertical Development Kit): to develop context modules
- ii. HDK (Horizontal Development Kit): to develop integration modules.