Profile in Success: **Bird Technology™**

Beyond DSLs: Business Natural Languages (BNLs) for a High Abstraction Level

Cincom VisualWorks sets new standards for maturity, flexibility, availability and cost-effectiveness

Since being founded in the year 2003, the French software development company Bird Technology has focused on developing applications based on domain-specific languages (DSL) for the finance sector as well as web 2.0 and web 3.0 applications for niche markets (such as transactions and simulations). The company's high-end services range from consulting, project planning and project management to application maintenance services. To speed up and facilitate the development of new DSLs and DSL-based applications, Bird is using Cincom VisualWorks.

From DSL to BNL

"For our projects, we focus on developing DSLs that integrate our Bird middleware platform", says Christophe Allegrini, Director of Application Development at Bird Technology. But Bird's software developers go even one step beyond creating new DSLs; their objective is to develop so-called business natural languages (BNL). "Simply said, a BNL is a DSL that is simplified by abstracting the syntax elements that are common to general-purpose programming languages such as Java", explains Allegrini. "In general in a BNL, you only position the notion of 'predicate object' as symbols. Thus the only remaining primitive data types are strings, numbers and dates."

The major aspect of creating a BNL is to reach a very high abstraction level based on a semantically rich, general-purpose programming language such as Lisp or Smalltalk. This will provide maximum flexibility and the opportunity to re-use certain primary elements such as numbers, dates, Booleans, etc.

Once the expert defined the required vocabulary, the application can be developed very quickly. It is easy to maintain and can be rapidly improved and adapted to future evolutions. Furthermore, its verifiable technological *and* logical reliability is another big plus.

When asked for the reasons for selecting Cincom VisualWorks, Allegrini explains: "First of all, we decided to use VisualWorks for its maturity, availability and homogeneity, which is not reached by other object-oriented languages. In addition, we needed a dynamic language providing a just-in-time optimiser while guaranteeing maximum stability with effective support. VisualWorks completely meets these requirements. Besides, we want to provide our customers with an integrated development environment (IDE) that allows them to use their DSL in the easiest way possible, on whatever platform they choose. Smalltalk is very well suited for this particular deployment."

Faster, More Power, More Flexibility

Up to now, the developers at Bird are more than satisfied with Cincom Smalltalk. Allegrini says: "With Smalltalk, we are reaching our goal of simplifying the syntax of our BNLs by limiting them to 'predicate object' instead of 'subject predicate object.' The subject will be used just and only to avoid ambiguities.

Compared to Lisp and Allegro CL, which had been used for developing our prototypes so far, Cincom Smalltalk has proven to be clearly more cost-effective and versatile. Furthermore, the VisualWorks IDE is easier to extend. The developers who used to work with Eclipse or NetBeans feel very familiar with it within the shortest period of time."

Development times could be reduced by 30% to 40% compared to Java. In one specific example, the development of a customised user interface that took six and a half days before, now even only takes 15 minutes.

"Smalltalk provides the perfect platform for us to meet the high requirements of our customers on DSL- and BNL-based applications", summarises Allegrini.

"Ne Plus Ultra" in Web Technology

For developing web applications, Bird is using a combination of Flash, VisualWorks and Seaside. Allegrini explains: "It takes more and more time to write an average end-user screen of a web application. So far for us, Flash has been a very good platform to create screens with a very good presentation and ergonomic quality. Unfortunately, Flash suffers from the quality of its back-end application server, Flex. So we decided to substitute the Flex server for the VisualWorks platform with Seaside. In my opinion, Seaside associated with VisualWorks is without a doubt the 'ne plus ultra' in web technology. With some Seaside modifications made, we now can develop a web application with its front end in Flash and the corresponding back end in the powerful VisualWorks environment."