

**MUNDO DE JUGUETES' TRUST IN ARTINSOFT'S MIGRATION SOLUTION – A CLEAR  
DEMONSTRATION THAT TECHNOLOGY INVESTMENTS IS NOT SOMETHING TO TOY  
AROUND WITH**

*"Migrating our application with the help of ArtinSoft saved us a lot of time and money, and it allowed us to standardize our database platform. Thanks to ArtinSoft's automatic migration technology, we have managed to obtain huge savings in license fees, as well as a system on a new platform that provides flexibility to quickly respond to market needs. We are now fully capable of developing our application and hence our business without any technological constraints."*

Mr. Leitón  
General Manager  
Mundo de Juguetes.

*"ArtinSoft is one of our strategic partners in Latin America due to their high quality and leading edge migration technologies. It has been impressive how other partners and customers have recognized the ArtinSoft's proven technology as a way out to an open and standard based environment, which is also the foundation of Oracle solution: Openness and full standard based"*

Edgar Vásquez  
Initiatives iPlatform Director  
Global Partnering, Oracle Corporation

## Company Overview

Mundo de Juguetes, the leading chain of toy stores in Costa Rica, has recently diversified its operations into office stationery and school materials. Since its inception in 1974, Mundo de Juguetes has constantly set new market standards by providing highly personal customer services together with the widest selection of quality goods. One of the key factors in Mundo de Juguetes' success has been its uninterrupted investment in information systems focused toward "Business Intelligence", enabling the company to simplify the most complex tasks in such an industry: inventory control, loss prevention, logistics, etc.

Mundo de Juguetes currently runs its operations from 12 stores, a number which they plan to increase to 25 local stores by 2005 in conjunction with a planned expansion in the other Central American countries by 2010. Their headquarters are located in San Jose, Costa Rica and they rely on a workforce of more than 130 collaborators.

## The Problem

Mundo de Juguetes, a leading toy distributor in Costa Rica with 12 stores nationwide, needed to standardize its database and development platforms in order to streamline its business operations and reduce costs.

The company's point of sale system had been developed and adapted to their specific needs over the years. However, since it was entirely developed on a more traditional database platform, it was becoming highly expensive to maintain and technically incapable of keeping up with the latest technologies. This created a potential risk for the company as it not only hindered their continued growth, but also limited their chances of maximizing the full potential of the new opportunities provided by more advanced technological platforms.

The company required a solution that would minimize the financial and technological impact of such a change on their business. The ideal solution would provide database platform independence as the company sought to standardize their applications in order to reduce license fees and make future software development much smoother. In addition, the ideal solution would have to be able to fully preserve and leverage the knowledge capital embedded in their point of sale application.

## The Solution

After looking into different alternatives, the company came to the conclusion that the only viable option capable of meeting all their financial and technological requirements was to automatically migrate their Informix 4GL-developed point of sale application to Java.

ArtinSoft, the worldwide leader in automatic software migration technology, provided the only thorough solution that could fulfill all the needs and requirements of Mundo de Juguetes. ArtinSoft migrated their Point of Sale application to Java 2, the benefits of which are abundant and are detailed further below.

ArtinSoft's migration technology is applied in the least disruptive fashion in order to ensure that our customers' daily operations suffer no transitional impact whatsoever during the process.

## Migration Stages

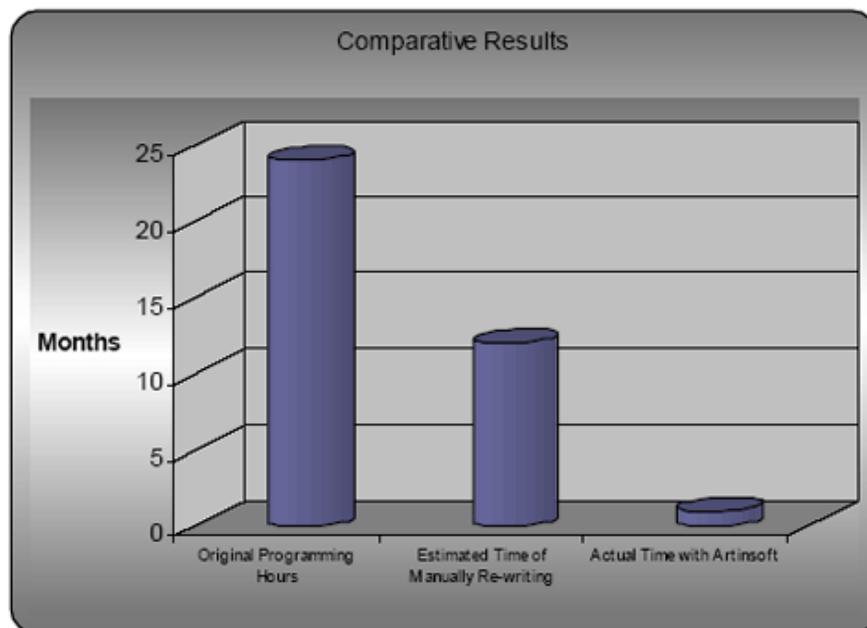
- The first step was to have the original code, written in 4GL, compiled at ArtinSoft's headquarters. Once the code was up and running, it went through ArtinSoft's automatic migration process. At the end of this process, the application code had been successfully migrated to Java.
- The following phase consisted in taking the migrated code, now in Java, and making it 100% functionally equivalent. To do so, some minor manual adjustments, such as correcting warning signals that are not automatically migrated, were made to the new code.
- Parallel to the previous stage, ArtinSoft consultants together with IT personnel from Mundo de Juguetes devised and ran a series of tests with the aim of verifying the functional equivalence of the application, i.e. that the migrated application performed equally as the original application did in I4GL.
- Once the testing phase was over, the newly migrated application was tested at an actual store of Mundo de Juguetes. The new Java application was installed and ran parallel to their old point of sales applications to see if it presented any unforeseen problems. As expected, the migration proved successful and the application ran flawlessly in the new environment.

- The final step was to implant the application at the rest of their stores around the country. It should also be noted that since this transition required no retraining for the end users, it only took less than a day for the application to be running at full capacity at each of the remaining stores.

As mentioned above, Mundo de Juguetes also decided to migrate their database platform. Their aim was to standardize their entire system and thus reduce their operating and maintenance costs, i.e. to avoid having to operate and pay for two separate licenses for Oracle and Informix systems. Their choice was quite easy as they already had other applications and database running seamlessly on an Oracle platform.

## The Benefits

ArtinSoft enhanced and expanded the Point of Sale application in many ways. To begin with, Mundo de Juguetes saved valuable time with the migration. As the graph below shows, the original application took about two years to develop, test and adapt to the needs of the client, and it was estimated that it would have taken a whole year to manually re-write the application. With the aid of three programmers, the migration from 4GL to Java took only three weeks. This means that in less than a month, Mundo de Juguetes was able to count on a completely modern and web-enabled application. It is also important to remember that the application's database platform was also migrated: the entire application was migrated from an Informix database to an Oracle database. Two different migration projects were thus successfully completed in three weeks.



Besides having saved invaluable time for Mundo de Juguetes, the cost of this migration solution proved to be relatively negligible for the company, averting the potential risks associated with re-writing a completely new project from scratch. According to Gartner group, it costs an average of \$14 per line of code for a re-write, whereas ArtinSoft's migration technology was carried out at less than a fraction of this cost. In addition, the re-write option would have meant total loss of the

underlying investment in their knowledge capital. ArtinSoft's technology, however, kept this invaluable asset intact by allowing the company to carry over years of irreplaceable work and experience into a more flexible technological environment. What ArtinSoft did was to breathe new life into the application. Now, this new scalable application has the possibility of expanding and helping Mundo de Juguetes maintain a competitive edge.

## The Technology

Freedom®, ArtinSoft's automatic migration technology, helps programmers convert their legacy or more recent applications to the language of their choice to fully exploit the more modern, agnostic database platforms. The company's conversion process from Informix 4GL source code to Java 2 provided the following results:

- A generated code with the same logic as the original code, considerably minimizing training time for developers.
- Functional Equivalence, a critical issue that means preserving the look and feel of the original application, eliminates the need for any user training.
- The possibility to implement a cutting-edge technology such as Java.
- The resulting application in Java can be edited on any Java development environment, is capable of communicating with different database engines through a JDBC connection, and is platform independent.