



## Microsoft Windows Embedded Customer Solution Case Study



## Embedded Technology Expands Brand Interaction with Consumers

### Overview

**Country or Region:** France  
**Industry:** Media and Entertainment

### Customer Profile

Embedia provides communication solutions that help advertisers interact with their customers more effectively.

### Business Situation

Embedia wanted to help advertisers make brand and event information available to their customers online. It needed to roll out this new functionality quickly to ensure competitive advantage.

### Solution

By working with Microsoft® Certified Partner Adeneo, Embedia developed a new solution using the Microsoft Windows® CE 4.2 operating system.

### Benefits

- Advertisers enhance business with interactive communication.
- Dynamic product for global success.
- Quick time to market ensures competitive advantage.
- Upgraded product is already in development.

“Microsoft creates highly valuable business solutions with high performing design tools that are easy to use, develop, and customise.”

Frédéric Chazelle, Chief Executive Officer, Embedia

When French-based company Embedia saw the market potential for interactive technology in outdoor advertising, it knew it had to develop a prototype quickly to ward off competitors. By teaming up with Microsoft® Gold Certified Partner Adeneo, Embedia used Microsoft Windows® CE 4.2 to develop an interactive device that used Bluetooth technology. The rich features needed for the device were available out of the box, and only minimal development was required for its design and integration. As a result, Embedia developed the Embedia Bluetooth Interactive Box (BIBOX) in just six months. Members of the public can now download electronic advertising content and information to their mobile device. Running on Windows Embedded technology, the Embedia BIBOX can run 24-hours a day, seven-days a week in a wide range of environments.



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Frédéric Chazelle, Chief Executive Officer,  
Embedia

## Situation

Embedia is a provider of embedded interactive communication solutions to the telecommunications and multimedia industries. Specifically, it provides innovative technologies that enhance traditional advertising media, such as billboards, shop windows, displays, and shelves, transforming passive information into interactive multimedia content. In this way, information can be sent to end-users' mobile devices using Bluetooth technology. This protocol supports wireless connections that enable communications between mobile phones, computers, and personal digital assistants (PDAs).

The founders of French-based company Embedia are experienced in providing technology solutions to the telecommunications and multimedia industries. For a new business venture, Embedia saw exciting potential for interactive technology in the advertising market to create an innovative link between businesses and consumers.

Information presented in traditional advertising media can be difficult to see and remember. Consumers can easily forget an advertisement displayed on a billboard or bus shelter for example.

By personalising communications, advertisers can reinforce their brand or image. Embedia saw this as an opportunity to develop an innovative, reliable communication system that would transform advertising displays.

Frédéric Chazelle, Chief Executive Officer, Embedia, says: “Our concept was to distribute interactive multimedia content to members of the public through Bluetooth.”

To achieve its aim, Embedia needed an operating system to provide an interactive medium for multiple sectors to connect to

consumers using Bluetooth. Advertisers, retailers, manufacturers, and event organisers can all benefit from faster and more efficient consumer communication.

The main requirements for these devices were clarity of information and ease of use for time pressured members of the public. The device also needed to run autonomously and be stable enough to withstand outdoor environments. Most importantly, the device had to be compatible with all Bluetooth equipped devices, to securely transmit data.

Embedia needed to release a prototype of the new solution in just six months to convince advertising companies of the benefits of the new technology. Early success would help it gain funding for future development initiatives and meet current investor expectations. Chazelle says: “Fast time-to-market was crucial in order to be the first to offer this type of device.”

## Solution

The developers at Embedia were already familiar with Microsoft® Windows® technology. Chazelle says: “The strong support and its availability of feature-rich tools convinced us that Microsoft technology would fit with our expectations.”

In late 2004, Embedia approached Microsoft Gold Windows Embedded partner Adeneo for feedback on its concept prototype. Adeneo is part of a robust Windows Embedded ecosystem, which ensures customers gain a great experience from a project's concept stages to its finish.

Chazelle says: “The team at Adeneo shared our excitement for the project and we began working together on one hardware platform. We benefited during this feasibility stage from the knowledge Adeneo has in Windows Embedded-based applications.”

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Frédéric Chazelle, Chief Executive Officer,  
Embedia

Support from Adeneo helped accelerate the development and implementation processes and Embedia Bluetooth Interactive Box (BIBOX) was ready for market within six months. Based on Microsoft Windows CE 4.2 operating system, it uses an embedded CPU for Intel PXA 255 computer processing unit (CPU) as its processor for high performance when transmitting information over Bluetooth.

To write the device applications, Embedia used Platform Builder and Windows Embedded Visual C++- a desktop development environment used to create applications and system components. These technologies optimise the system and create efficiency when managing low level communications.

Chazelle says: “The Windows Embedded tools available out of the box helped us easily build a strong platform, simplify the choice of modules, and provide access to debugging tools and online documentation. The tools also permit the device to run programs written for, or process data that originates from, a different type of computer system.”

Power Manager controls the device power supply during peak communication times and improves overall operating system power efficiency. At the same time, suspend/resume mechanisms put the device on standby during non-working periods.

Once the device is on, the only human intervention required is to capture audience statistics through a USB key. Chazelle says: “The basic device is an embedded interactive box and is only 190 millimetres (mm) by 140 mm in size, weighing 350 grams. It can transmit free downloads of music, videos, and text messaging all through Bluetooth. By identifying types of authorised Bluetooth-connected devices it can adapt content to the features of device.”

The BIBOX Bluetooth detects and contacts any member of the public who has a Bluetooth-connected device within a 20-metre radius. Potential customers are alerted to a message informing them that the poster or billboard is interactive. By accepting more information, the user can download free content to store in document, picture, or video folders.

### Benefits

By using Windows Embedded technology, BIBOX delivers numerous indoor and outdoor interactive advertising campaigns. These are managed through the VIACOM advertising network and publicise world-famous brands such as Nike, FHM, Paramount Pictures, and Levis.

### Device Adds Value to Advertisers

The traditional advertising business is now enhanced. Chazelle says: “The value for advertisers comes from achieving more effective communication with potential customers’ campaigns.

“Advertisers can avoid using paper-based products, and reduce spending on the printing of commercial booklets, leaflets, or business cards.”

The solution also offers advertisers greater flexibility. Content distribution can be scheduled to meet peak traffic flows, so simultaneous distribution is simple. In addition, real-time audience statistical information is available for analysis, accurate reporting, and billing.

### Powerful Solution Offers Optimum Performance

BIBOX devices can run for weeks without human intervention, delivering comprehensive advertising campaigns extremely cost effectively. This is a key selling point for Embedia. Yannick Chamings, Windows Embedded Group Manager,

“The combination of a well designed operating system and powerful development tools such as Platform Builder and Visual C++ were key to achieving our objectives within the requested timeframe.”

Yannick Chammings, Windows Embedded Group Manager, Adeneo

Adeneo, says: “Wireless communication can consume a lot of power but by using Power Manager, the device can easily switch to a low-power state whenever the device is not communicating.”

Power Manager reduces the power consumption of a device, so Embedia clients can easily maintain and preserve the file system in random access memory (RAM) during the ‘reset’, ‘on’, ‘idle’, and ‘suspended’ power states. Chazelle says: “We have a reliable product that can run 24-hours a day, seven-days a week in outdoor display panels.”

The functionality of Windows Embedded technology has provided a feature-rich solution that is available out-of-the-box. As a result, Embedia and Adeneo were able to deploy the new solution quickly with minimal development costs.

Integration of the new devices with familiar applications such as Microsoft Office PowerPoint® 2003 supports the best possible communication with prospective customers.

#### **Dynamic Product Results in Global Expansion**

Embedia is fast becoming a trusted supplier of interactive communication solutions worldwide with contacts in Germany, Switzerland, North Africa, and the United States. Chazelle says: “We are now actively working with billboard and bus shelter manufacturers to include BIBOX devices at production stage. This will serve to sustain our competitive business position.”

Embedia recently launched an interactive campaign for the film industry. It equipped French theatres for the 20th Century Fox X-MEN movie, and members of the public could download movie information and screening times to their mobile devices.

Chazelle says: Thanks to our first interactive campaigns, we were asked to work for new sectors at the beginning of 2006. These include education (interactive campus tool for instant feedback during the course), sports events, citizen information, and vending machines. These markets represent the first phase of diversifying our activities.”

#### **Quick Time to Market Heads Off Competition**

By choosing to work with a partner skilled in Windows CE, Embedia brought its new product to market in just six months. Chammings says: “The combination of a well designed operating system and powerful development tools such as Platform Builder and Visual C++ were key to achieving our objectives within the requested timeframe.”

The speed of development prevented competitive solutions taking market share, which was extremely valuable for the new business. Chazelle says: “The combination of a well-designed operating system and powerful development tools such as Platform Builder and Visual C++ were key to achieving our objectives within the required timeframe.

“Microsoft creates highly valuable business solutions with high performance design tools that are easy to use, develop, and customise.”

#### **Future Development Already in Progress**

Embedia and Adeneo continue to work together and are now in the testing phase of an upgraded model that will use Windows CE 5.0 powered with a new generation of embedded CPU for Intel PXA 270 CPU and developed with Microsoft Visual Studio® 2005. The new product will offer greater distance communication and monitoring using online remote access to update interactive contents in real time.

Chazelle says: “Our first objective with the first range of interactive products was to

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create an interactive environment for billboards, bus shelters, shop windows, and theatres. Tomorrow, our aim might be to set up payment methods in our interactive environment using mobile devices.”

## Microsoft Windows Embedded

For more information about Windows Embedded products please visit: [www.microsoft.com/windows/embedded](http://www.microsoft.com/windows/embedded)

## Software and Services

### ■ Technologies

- Microsoft Windows CE 4.2
- Microsoft Visual Studio 2005

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Document published July, 2006

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