



## Babbel

Leading language training provider uses Adobe® Flash® Player 10.1 to integrate speech recognition into interactive online platform, giving learners instant feedback on pronunciation

### Babbel

[www.babbel.com](http://www.babbel.com)

<http://vimeo.com/10742992>

### Industry

Language learning

### Challenges

- Create new capabilities for online, self-directed language learning system
- Rollout easy-to-use speech recognition capabilities
- Minimize downloads required

### Solution

- Online language learning
  - Speech recognition tool
  - Rich Internet application
- Babbel uses Adobe Flash Platform to deliver a highly interactive, online language learning service that includes real-time pronunciation feedback enabled by Flash Player 10.1.

### Results

- Increased paid subscription rates
- Achieved first-in-class client-side audio processing
- Provided real-time pronunciation feedback
- Increased effectiveness of interactive learning experience
- Delivered solution rapidly in integrated Adobe development and deployment environment
- Made service accessible to broadest possible market

### Systems at a glance

- Adobe Flash Platform. Components used include:
  - Adobe Flash Builder™ 4
  - Adobe Flash Player 10.1
  - Adobe ActionScript®

### Active learning through innovation

While studying a foreign language online is an increasingly popular way to learn a new language, there has still been room for improvement in mastering pronunciation. Until now, the major drawback of learning to speak a foreign language online is exactly that—speaking. Learners had no fast and easy way to know if they were pronouncing words correctly. The only way to practice speaking and get feedback was to participate in online community activities.

Babbel stepped up to fill that gap. With more focus on self-directed learning rather than a community-based methodology, Babbel makes it possible for students to become proficient in seven different reference and learning languages: Italian, Spanish, French, Swedish, English, German, and Portuguese.

Instruction is possible in 42 different combinations—from Swedish to English, Italian to French, and so on. Instruction levels range from brush-up to advanced, and include specialty topics, such as holidays and business travel, replete with review and progress management tools, images, and vocabulary training exercises. Babbel has more than 800,000 registered users, 70,000 of which signed up in the first two months after the speech recognition feature launched—about a 30% increase in the growth rate.

Babbel takes the intimidation factor out of practicing pronunciation by allowing learners to speak from the safety of their desktop before they face real-world situations or participate in community chats. Markus Witte, managing director of the Berlin-based firm, says that it often takes courage for students to start speaking a new language. "The Adobe Flash Platform enables us to provide instant feedback for learners to effectively practice and improve their pronunciation online," he says. "There is no other web-based technology that allows us to provide this kind of functionality in a similar way without a download. This makes our product fully comparable to traditional eLearning software on CD-ROM and it's giving us a significant competitive advantage."

This breakthrough interactive learning capability is integrated into all Babbel learning modules, which are presented in an elegantly designed, easy-to-use rich Internet application (RIA) entirely built using Adobe Flash Platform tools. Learners listen to words and phrases recorded by native speakers and are then prompted to repeat them.

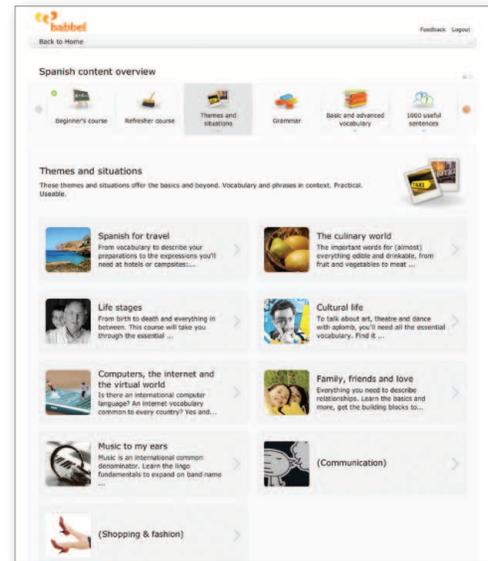
The quality of the pronunciation is rated on a scale of 0 to 100 and the score appears immediately on the screen. A result of 50 or higher means that the attempt is generally understandable. Students can continue to use the tool beyond that point to further polish their verbal skills.

Providing access to virtually anyone online, the Babbel service operates on all platforms, in any browser, and requires no additional software installation. The widespread adoption of the Adobe Flash Player, which is installed on 98% of Internet-connected desktop computers, enables Babbel to offer its service to the broadest possible global market.

### First-in-class, client-side audio processing

When the developers at Babbel began this project, they evaluated technologies that could provide an integrated development framework, and that would also keep costs in check and accelerate product time to market. They did not want to pursue building proprietary solutions and assume the responsibility and overhead of managing server farms.

The speech recognition tool from Babbel is the first application of its kind to integrate instant audio processing—with no downloads—into online foreign language training. The breakthrough is enabled by Adobe Flash Player 10.1 and transforms interactive learning by greatly enhancing pronunciation exercises.



*“The Adobe Flash Platform enables instant feedback for learners to effectively practice and improve their pronunciation online. There is no other web-based technology that does this without a download, giving us a competitive advantage.”*

Markus Witte  
Managing director, Babbel

Rather, they sought a solution that would work entirely in a web browser to rapidly deliver real-time user feedback. However, many of the technology options the Babbel team initially considered would force users to download and install new, potentially error-prone software.

“When we saw the Adobe Flash Player 10.1 announcement, we stopped looking at other solutions,” says Witte. “For the first time on any platform, it became possible to easily accept microphone input and process it on a user’s computer, without requiring people to download specialized software. It was the perfect solution that allowed us to add another dynamic dimension to online language learning.”

### **Making technical challenges go away**

The Babbel platform is a RIA built with Adobe Flash Builder 4. The development process of the speech recognition feature naturally divided itself into two parts: one was writing the algorithm that interprets how well the user pronounces a word; the other was integrating the new speech recognition functionality into the Babbel learning platform. It took three audio developers only a few months to complete the total solution from inception to launch.

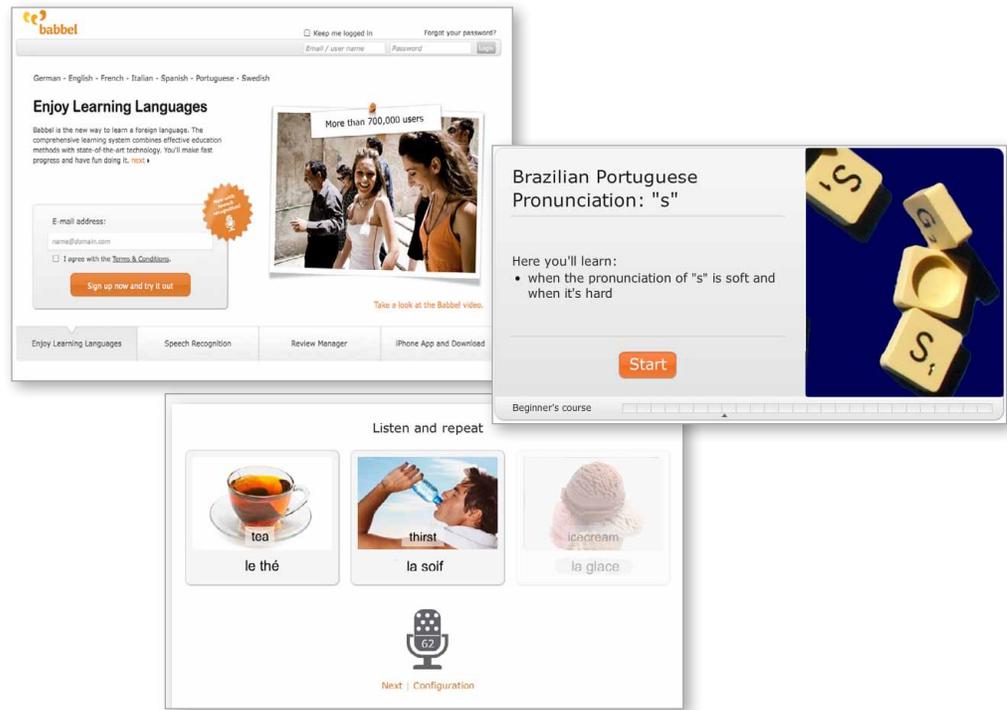
The tool that saved developers the most time was a method codenamed Alchemy, an Adobe Labs research project that enables developers to use client or server-side C and C++ code and run it in Adobe ActionScript®, the native Flash programming language. “Speech recognition code is loaded with low-level data processing, so Alchemy allowed us to do the digital signal processing (DSP) in C++ and even use existing code libraries. It saved us a tremendous amount of time in development,” says Thomas Holl, technical director at Babbel.

Because the Babbel solution was developed and deployed using the extensible Adobe Flash Platform, the door is opened for future development projects to add even more value to the highly interactive language learning platform. The Babbel team is looking at using Adobe LiveCycle® Collaboration Services to integrate video chat and collaboration capabilities, which would add more valuable features for client-side audio technology in the language learning marketplace.

### **Outstanding market acceptance**

Babbel’s new speech recognition feature has received tremendous feedback from users—as is evident from the accelerated adoption rate since the new functionality was released. The business and technical press have also lauded the platform. “The feature we launched is the first of its kind,” says Witte, adding that self-directed online foreign language learning is a relatively new market for individuals. “This achievement was only possible because one of the many enhancements found in Adobe Flash Player 10.1—support for microphones built into computers.”

With the ability of Adobe Flash Player 10.1 to accept audio input from the computer's standard built-in microphones, students can more easily learn new languages through a combination of speaking, reading, listening, matching, and writing. They can practice pronunciation in privacy without having to participate in online communities.



Witte adds that most people don't have high-end microphones connected to their computers. The Babel platform has the unique ability to use the standard audio input device on a typical desktop or laptop and process out noises and other sounds that are caused by the environment or the technical setup: rumbling, hissing, and other sounds mixing with the voice. That was a huge part of the technical challenge, according to Witte.

"Thanks to the Adobe Flash Platform, we are the only online learning service that has speech recognition of this kind without requiring the user to install new software," says Witte. "From a business standpoint, this places Babel in a market position to go head-to-head with traditional offline foreign language training software. That is an incredible technical and business achievement."

**For more information**  
[www.adobe.com/flashplatform/](http://www.adobe.com/flashplatform/)



**Adobe Systems Incorporated**  
345 Park Avenue  
San Jose, CA 95110-2704  
USA  
[www.adobe.com](http://www.adobe.com)

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