# TOSHIBA

# Announcing Stratagy ES IVR Release 2

We are pleased to announce Stratagy ES Release 2. In addition to this release marking the merging of Interactive Voice Response (IVR) and Messaging Voice Processing (MVP) functionality onto the Stratagy ES Windows NT® product, several enhancements have been made to IVR. These new enhancements should really open up the world of IVR, providing the capability to offer even more solutions to your customers.

With the introduction of Stratagy ES MVP, you now have a complete and aggressively competitive voice processing offering for your customers. Stratagy ES now offers your customers the advantage of using one flexible and powerful platform on which to build all the voice-based applications they need. If investment protection is important to your customers, then Stratagy ES is the product for them. A customer who initially may require an IVR solution can at any time easily add any or all of the available MVP features, such as speech enabled Automated Attendant, voice mail, etc., simply by adding the necessary line cards and software. Or, a customer with Stratagy ES MVP solutions can at any time add an IVR solution without the purchase and maintenance of a second platform.

By linking IVR and MVP together on this and subsequent software releases, your customers are guaranteed to be completely in step at all times.

# IVR Enhancements included in Stratagy ES Release 2.0

The key IVR enhancements included in Release 2.0 are:

♦   Natural Language Speech Recognition

♦   T1

♦   COM Development interface

♦   Text-to-Speech

# Natural Language Speech Recognition

Over the last few months we've been talking about our plans for adding Natural Language Recognition to the Stratagy ES IVR product. Well, this exciting capability is now fully integrated into our product, and ready to extend the value proposition that IVR offers.

You may have seen the recent press release announcing our formal agreement with SpeechWorks International, a leading provider of speech recognition technology, development tools, and products.

It's time now to start showing your customers how speech recognition can effectively be used to provide superior customer service while saving costs and generating revenue.

# What is SpeechWorks?

SpeechWorks International is one of the top speech recognition companies, providing natural language speech recognition technology for commercial grade voice processing platforms. SpeechWorks was founded with technology licensed from the Massachusetts Institute of Technology (MIT). One of the ways that SpeechWorks differs from their competitors is that their prime business focus is providing toolkits and utilities that simplify and speed the implementation process of speech recognition. This business strategy carries with it a strong partner support program. Take a look at their website, speechworks.com, to read about some of the solutions they are working on with their partners.

TSD Engineering has integrated the SpeechWorks® product into our own Stratagy ES software environment. This approach enables us to take full advantage of SpeechWorks' product while not compromising the versatility and robustness of the Stratagy ES engine.

# What can be done with Speech Recognition?

SpeechWorks has developed a series of DialogModules™ that provide powerful, reusable software objects that speed development and implementation. These DialogModules are high-level building blocks representing frequently-used caller interactions that developers can quickly assemble and integrate into applications. Each DialogModules encapsulates a particular task such as capturing a "yes" or "no" response or creating a voice menu.

The following DialogModules are available with Stratagy ES IVR:

♦ Base – Yes/No, numeric digits, AlphaNumeric digits, voice menu (up to 20 words per menu), Item List (up to 250 words), and the Vocabulary Editor.

♦ Extended (Base plus) – U.S. ZIP Code, Phone number (North American Numbering Plan), Spelling, Sentence Context, Currency, Date, Time, Natural Numbers, and Item List (up to 2,500 words).

♦ Professional NL (Extended plus) – Item List (over 2,500 words to 75,000 words), and Custom Context. SpeechWorks will be used to develop any IVR applications requiring this module.

**Note**      There are also six bundles for Automated Attendant applications that accommodate up to 75,000 names. The Automated Attendant products will be covered in the Stratagy ES MVP sales bulletin.

# Does Speech Recognition Work?

Yes it works. Various research groups have been developing speech recognition technology since the 1970s. The technology has reached a point where accuracy rates in excess of 95% can readily be attained along with consistent performance, regardless of gender and regional accents.

Speaking of accuracy—most speech recognition providers will not talk about accuracy percentages. Too many variables, such as road or ambient noise, speakerphones, side conversations, etc., can affect the performance of a perfectly good application. Instead, it's often much more useful and realistic to talk about "transaction success rates." This is a measure of how successful callers are in completing their intended objective. It's far more useful to understand, for instance, how many callers wanting to check their account status were successful in accomplishing that.

**Note**      Don't confuse commercial grade Speech Recognition, like this product, with the products that have been recently bundled with PC applications. Those recognition products are designed to "train" themselves to the user's voice and are not designed to accurately recognize random and diverse voice traits effectively

# Where are the Speech Recognition Opportunities?

Everywhere. Several great IVR applications have never been implemented because of the limitations of touchtone input. A cardinal rule of IVR is that a well-developed application should never present a menu with more than four or five choices. A company desiring an automated product ordering system, for example, often chose to abandon the idea over implementing a system that would force their customers to navigate through a cumbersome menu.

But that's all changed now. There are two main reasons why the world has been waiting for effective speech recognition technology. The first is that humans just find it much easier to interact by speaking. The second is that speech recognition creates the ability to automate virtually any process. What this means in the world of IVR is that existing applications can be made more user-friendly and quicker to navigate. It also means that new applications, previously difficult to justify, can now be implemented, extending even further the value of an IVR system.

Some examples:

Most IVR applications fall into one or more of three categories: communication, information, and transaction. Speech recognition can greatly add to the effectiveness of solutions in these categories and often is the actual enabler of the solutions.

## Transactional

♦ Ordering systems – Callers speak the name of the product, quantity, color, size desired, delivery date, etc.

♦ Bill Payment – Caller specifies bill to be paid, amount, credit card number, etc.

♦ Scheduling systems – Caller says, "Boston to Philadelphia at 7 a.m.", "Set appointment for Thursday morning", "Reserve conference room 3A", etc.

## Informational

♦ Dealer locators – Caller speaks state, county, area code or zip code.

♦ Information directories – Caller speaks name of product, name of event, movie name, order number, astrology sign, bus route schedule, flight information, etc.

## Communication

♦ Speech-enabled Auto Attendant

# Configuring Speech Recognition for IVR

Three factors are involved in the configuration and pricing of speech recognition:

♦ Types of vocabulary that need to be recognized

♦ The number of words to be recognized

♦ The number of ports or the number of simultaneous callers expected to access the recognizers

This last factor, number of ports, also determines whether the physical configuration of the speech recognition capability is supplied entirely by software (host-based), or whether it also requires hardware (Antares™-based).

Up to eight ports of ASR can be supported as host-based, without additional hardware. Applications requiring more than eight ports of ASR require an Antares card.

**Note**   The eight port host-based ASR limitation applies to each Stratagy ES platform. Example: If a customer has Stratagy ES MVP with four ports of ASR Automated Attendant and requires an additional eight ports of speech recognition for Stratagy ES IVR, an Antares card is needed for all of the speech recognition. The customer would not, however, need to re-purchase the initial four ports of ASR Automated Attendant.

The following shows the choices of speech recognition available, regardless of whether it is host or Antares-based:

| Stratagy ES ASR Feature Group | Description |
|---|---|
| **BASE** | Stratagy ES Basic ASR Feature Group |
| | Yes/No, Numeric digits, Alpha-Numeric digits, Voice menu (up to 20 words per menu) |
| | ItemList up to 250 words |
| | Vocabulary Editor |
| | Includes 4-port Licensing |
| | Additional Ports (each) |
| | |
| **EXTENDED** | Stratagy ES Extended ASR Feature Group |
| | Base Capabilities |
| | U.S. ZIP Code, Phone Number (North American) |
| | Spelling, Sentence Context, Natural Numbers |
| | Date, Time, Currency, ItemList up to 2,500 words |
| | Includes 4-Port Licensing |
| | Additional Ports (each) |

The IVR ASR Feature Group and the MVP ASR Automated Attendant Feature Group provide different capabilities.

Scenario 1: A customer purchases MVP with ASR Automated Attendant. The customer later wants to add IVR with ASR capabilities. The customer must purchase the IVR ASR Feature Group.

Scenario 2: A customer purchases IVR with ASR capability. The customer later wants to add ASR Automated Attendant. The customer needs to purchase the MVP ASR Automated Attendant Feature Group.

Pricing for IVR Speech Recognition can be found in the Dealer Price Book on FYI.

# When should you offer Speech Recognition?

Always. We know that speech recognition provides a much friendlier user interface and that it also makes applications available that may have been impossible to implement with touchtones. Speech recognition, presented as an integral part of every application, will provide the customer an edge in several ways:

♦   Sets the customer apart from the competition

♦   Opens the possibility of introducing more solutions than the competition

♦   Developing the initial system as speech recognition is far more cost-effective than adding it later. Speech enabling an existing system will most times require an almost complete re-write of the application—a costly measure.

♦ Provides an opportunity for implementing a phased solution should the customer choose to start with a touchtone system

And remember—implementing speech recognition on small systems is extremely cost—effective. In many cases, speech recognition capability can be added for about a 10% incremental cost. Compared to the value it can provide, that's a bargain.

# Becoming Familiar with Speech Recognition

We've put a fancy wine ordering speech recognition demonstration up on our demo line (1-800-678-MAIL). This demo is based on a "Wine of the Month Club" concept, with about 20 wine selections that can be made. On your first call to the system you'll be skillfully guided through the process of selecting a type of wine, a quantity, and a desired delivery date.

On subsequent calls you may want to try the natural language context feature that enables you to accomplish the entire transaction in one sentence by saying, "Place an order for 3 cases of Cabernet (or whatever wine choice) for delivery on Thursday."

You'll see instantly how speech recognition has been used effectively. In this case, to accomplish three distinct transactions—product selection, quantity, and delivery date—in about 15 seconds. Think about the savings that could mean to a business and the convenience provided to their customers!

We have also incorporated speech recognition into our soon to be announced targeted product for schools, *SMART* Suite. *SMART* Suite will include modules for auto-outdial absentee notification, E-mail absentee notification, Homework Assignment Center, and events/cafeteria menu hotline.

*SMART* Suite will be made available as either speech-enabled or touchtone driven. The speech-enabled product will be integrated into the Homework Assignment Center, and events/cafeteria menu module. In this way, parents and/or students can call into the system, simply speak the name of the teacher, and be transferred directly to the appropriate mailbox where homework assignments can be recorded. Callers will also be able to check on meeting schedules, sporting events, etc., just by speaking the topic of interest.

Stay tuned for more information on *SMART* Suite.

# T1 Capability for IVR

T1 capability has been added to the Stratagy ES IVR product. This opens up more possible environments in which Stratagy ES IVR can be offered, and keeps us competitive in the 24~48 port situations. Though Toshiba switches do not support station-side T1 connections, Stratagy ES IVR is free to be integrated into environments with switches from other vendors.

The new Stratagy ES T1 capabilities provide for station-side connection as well as direct CO connections. Make sure that for IVR opportunities approaching the 24 port range, customers understand they can now opt for less expensive T1 lines, rather than analog lines.

# COM Development Interface

A big enhancement to Stratagy ES IVR involves the change we've made to the application development interface. Now IVR/Interactive Web Response (IWR) applications can be developed using Microsoft Component Object Mode® (COM), ActiveX®, or Visual Basic®.

Because IVR can be an integral part of a company's business strategy, these systems are often put out for bid. A critical factor in the selection of an IVR system can be the ease and speed with which applications can be developed or enhanced.

The fundamental change we've made to Stratagy ES IVR—allowing for the development of its applications using common programming languages and/or tools—enables us to stay competitive, and, in

fact, can give us an edge when up against more mature IVR vendors. Many of the long-standing IVR vendors have developed their own proprietary development interfaces. Because of the number of systems they may have currently installed, they are understandably reluctant to migrate to newer, more "open" development environments. Often this means that application development needs to be performed by highly-skilled, highly-paid programmers who have most likely spent several days of training on that proprietary system.

The ability to develop Stratagy ES IVR solutions using Visual Basic, for instance, means that highly-skilled, highly-paid programmers don't necessarily have to be used. It also means that solutions can often be developed quicker and at less cost. Allowing solution developers their choice of widely available tools and languages can really make the difference in providing a customer the comfort level of true investment protection.

In addition, IVR solutions that have been developed using languages such as C + +, or tools such as Visual Basic, allow for easily extending these solutions to the web. So, whether a customer chooses to have Toshiba provide a turnkey solution, or to take on the development themselves, the opportunity for a solution that can be provided with both telephone and Internet access is now available.

# Text-to-Speech

Stratagy ES Release 2.0 also brings us the ability to integrate Text-to-Speech (TTS) technology into our IVR solutions. TTS is an advanced technology that converts text symbols into synthesized speech.

This interesting technology can be used very effectively to accomplish solution objectives that would otherwise be too costly to implement. TTS is most effective within IVR solutions with a requirement to speak back either large numbers of items or dynamically changing items.

Here are a couple examples of how TTS can be used effectively:

♦ A new business is rapidly adding dealerships. They want a dealer locator application on IVR, but know they will never keep up with adding recordings for each new dealership's name, address, and telephone number. And they don't want the expense of hiring voice talent every time they add a new dealer. Instead, by adding TTS functionality to the IVR, as soon as a new dealership is entered into the database it becomes available to callers using the IVR system.

♦ A catalog business would like to add a speech-enabled ordering system. Callers have the ability to order any of several hundred products just by speaking the name, size, and quantity of product desired. After an order is placed, the customer would like to be able to verify the order by "speaking" back the name of the item. For catalogs with large, rapidly changing inventory, TTS is the way to go. TTS is easily capable of speaking back to the caller what he/she has just ordered, "the deep-sea, amber and mauve Fishin' Magician."

Pricing for TTS for use with IVR can be found in the Dealer Price Book posted on FYI.

# The Power of IVR

We hope you're uncovering IVR solutions at your customer sites. With these new enhancements we're fast approaching the day we can say that almost every process and transaction can be automated intelligently.

And remember, you don't have to be an IVR expert today to take advantage of the direct and indirect revenue that these solutions can generate. After your first experience providing a customer the powerful benefits of an IVR solution you may want to become an expert, but till then just call me directly or your local IVR Regional Sales Manager.

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Good selling,

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