



BUSINESS COMMUNICATIONS COMPANY, INC.

**G-268
VOICE RECOGNITION:
TECHNOLOGIES, MARKETS,
OPPORTUNITIES**

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INTRODUCTION

REASONS FOR THE STUDY AND ITS IMPORTANCE

Faster processing, better noise reduction techniques and more sophisticated speaker differentiation are enabling voice recognition technologies to realize their long-awaited potential. With worldwide software revenues expected to reach \$1.5 billion by 2007, this emerging industry owes much of its growth to advances from the critical triad of automatic speech recognition (ASR), text-to-speech (TTS) and speaker verification (SV) technologies that represent its cornerstones.

Promising applications for these technologies are expanding dramatically. Virtually every enterprise sector is looking to speech-enabled features to help implement its business models. Brokerages, airlines, and banks are increasingly adding voice recognition functionality to not only enhance their telephone-based customer contacts but also to alleviate security concerns. Personal digital assistant (PDA) manufacturers are hoping to increase the "stickiness" of their products by adding speech-enabled Internet browsing. Help desk providers are adding voice recognition capabilities to their help lines to educate users and alleviate call queues.

OBJECTIVES OF THE STUDY AND ITS CONTRIBUTION

While voice recognition technologies promise to address the pent-up demand for automated customer care solutions, realizing that promise will require changes to customer preferences as well as to the economic climate. Whether obtaining stock quotes from a landline telephone call, driving directions from a cell phone call, or accessing the Internet from a personal digital assistant, consumers are not only increasing their expectations about the content quality, but also about the quality of the experience.

Traditional habits persist. No matter how compelling the content or efficient the transaction, many consumers still prefer to talk to a live operator. They also carry the baggage of past unsuccessful experiences with speech recognition applications that were implemented by early industry adopters.

Additionally, choosing voice recognition solutions represents a significant IT investment. In the aftermath of the worldwide economic downturn of 2001, many companies feel compelled to keep discretionary spending to a minimum. They find it hard to justify spending those dollars on technologies that are often considered more strategic than obligatory to their survival.

Yet feedback from call centers that have already embraced speech-enabled processes provides compelling evidence that properly integrated voice recognition applications can help companies realize cost savings of as much as 80%. Given the continued adoption of wireless devices and the increasing demand for unlimited access to information, it is a good bet that many enterprising companies will choose voice recognition solutions for competitive advantage even when the short-term economic landscape remains murky.

This report analyzes in depth voice recognition technologies and the market and applications they serve. It addresses such questions as:

- Who is using these technologies?
- What benefits do they accrue from using them?
- At what price points do they buy them?
- Which markets will reap the most benefits from their adoption?
- Which issues must be addressed to generate a successful return-on-investment?

AUDIENCE FOR THE REPORT

This report emphasizes the market potential for voice recognition technologies as well as the current and future forces shaping the voice-enabled market. It is targeted at manufacturers, supply chain personnel, marketing managers, and futurists.

SCOPE AND CONTENT OF THE REPORT

This report analyzes voice recognition technologies and their markets. It recognizes the fact that software technologies alone cannot build the momentum needed for its success. Hardware acting as conduits and enabling the delivery of these technologies is also integral to the adoption of these technologies. Additionally, tracking the growth of traditional and emerging voice-enabled devices is important since these media will promote and extend voice recognition's reach.

An overview of the voice recognition industry precedes later chapters that review the main voice recognition categories and discuss top supplier market share, new technologies, and the unique challenges each category faces in the future. Five-year forecasts follow, segmented by voice recognition categories as well as expansion into end-markets.

Succeeding chapters discuss enabling technologies, corporate and national research and development funding, the organizational and economic makeup of the voice

recognition industry, and the legislative, political, and environmental issues facing the industry. The changing dynamics of international market share are also addressed.

The appendices contain upcoming voice recognition industry-related conferences, recent patent grants, as well as a list of related mergers and acquisitions, licensing arrangements, and partnerships.

METHODOLOGY AND INFORMATION SOURCES

The material presented in this report is based on information gathered from personal contacts with participants within the voice recognition industry, and on an analysis of the technologies, issues, and concerns gathered from technical papers and industry conferences. Our final analysis and projections combine the consensus of primary contacts and our assumptions regarding the impact of both historical and emerging trends.

Additional data was obtained from analysis of secondary sources. These include trade publications, trade associations, company literature, and on-line databases. This research was done to supplement our understanding of applications, markets, and trends in the voice recognition industry. All dollar estimates in this report are based on 2002 constant dollars.

RELATED BCC REPORTS

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The following published or soon-to-be published BCC reports expand on many of the concepts featured in voice recognition:

- **G-190R** *The Changing Commercial Banking Industry Structure—Updated Edition*
- **G-260** *Video Games: The Dominant Force in Electronic Entertainment*
- **G-246** *Wireless Infrastructure in the World Market*
- **G-263** *E-Business and E-Payments: How? Who? How much?*
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