truetalk.com

Business Plan

29 February 1999

Confidential; Copy __ of __

Business Plan for *truetalk.com*

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Executive Summary

Market and technology trends favor voice-enabling the Internet, providing convenient voice-access from both telephones and the desktop. We estimate the "voice web" market to be $2B by 2004. We have the management, the technology advantage, and the engineering momentum to become an early market leader.

Entropic, Inc. will re-launch the company as an Internet company, wind down its legacy (R&D Toolkit) business, and concentrate 100% on voice-enabling the web. We will change the company name to reflect our product brand and Internet focus – the working name is *truetalk.com* (we already have the Internet domain truetalk.com, and we own the registered trademark "truetalk").

We will concentrate on providing wireless telephone users with natural dialog access to the web, with the first application being access to personalized home pages at portals. Because there is a strong correlation between active Internet users and wireless telephone users, there is a large potential market with a simple value proposition: *more wireless air time*. This will produce direct revenues, which can be shared between the wireless carrier and the portal. Furthermore, because the users will depend more on their personalized home page, the portal will become stickier, which leads indirectly to increased revenues from advertising and referrals, and to higher market caps

We will start by fielding a custom system that delivers personalized information to wireless telephone users – stock prices, news headlines, sports scores, weather, etc. Ideal customers for the system include portals such as AOL/Netscape or Excite/@home, wireless providers such as Nextel or Vodafone/Airtouch, and news services such as Reuters.

We will follow this with three products: *truetalk VoiceGateway, truetalk VoiceWeaver,* and *truetalk VoiceExplorer*.

VoiceGateway will be our primary product - a web voice gateway for telephone access, particularly from wireless telephones. It will offer wireless providers, Internet providers and enterprises the ability to field systems such as the custom portal system, and in general to provide voice access to web sites. *VoiceWeaver* is an authoring tool for dialogs (it produces the "voice pages" rendered by *VoiceGateway*). It will facilitate *VoiceGateway* sales as well as produce direct revenues. *VoiceExplorer* is an add-in that provides voice control to Microsoft Internet Explorer and allows it to render dual-mode voice and visual interfaces. We introduce *VoiceExplorer* primarily for marketing and branding purposes.

We aim to be technology leaders as well as market leaders. As such, we will serve on standards committees, maintain a presence at relevant technology conferences, and in particular seek a major role in establishing a standard dialog markup language (DML).

This is a new market with no established leader. We can emerge as the leader because our technology is better than that of potential competitors, and because we will focus 100% on the voice-web market.

To date, we have raised $4.5M from Cambridge University (UK), Amadeus Capital (UK), Oak Investments (US), and Mr. Frank Bonsal (US).

We expect to become a $100M company within four years, and we require an additional $30M in funding to reach this goal. We expect to make an IPO within 3-4 years, although the company would also be a natural target for acquisition.

For a summary of our business plan in slide form, see Appendix II.

Corporate Vision and Mission

The Internet continues not only to grow dramatically, but also to evolve into the preferred means of implementing personal and enterprise computer applications. Applications are written in web-centric languages (HTML, JavaScript, Java, etc.), stored on standard web servers, and run by end-users via desktop browsers.

Speech technology can now support natural dialogs between people and machines. This makes it possible for telephony to extend the connectivity of Internet communities and to extend the reach of Internet products and services. "It's not a telephone, it's a terminal."

We believe that such voice dialogs are best implemented in a web-centric way. Thus, we will field advanced dialog systems as voice pages addressed by URLs and accessed by means of a voice browser, rather than as special purpose systems addressed by a telephone number. Voice browsers will render dialogs using a standard dialog markup language (DML).

We will apply the same web-centric approach to the desktop. Future desktop browsers will not only render voice dialogs from DML, but will be able to render applications that interact by means of dual-mode visual/voice interfaces; we call these dual-mode browsers.

Our corporate vision is to revolutionize how people work by allowing them to talk to the web.

In the long run, we plan to serve the entire voice-web market, including e-commerce, information retrieval, voice-controlled desktop applications, web-TV, IP-appliances, automobiles, audio search engines, etc. We will not be directly active in voice-communications (e.g., VoIP, except to the extent that VoIP requires special processing to enable speech recognition).

In the short run, we will concentrate on providing wireless telephone users with natural dialog access to the web. The benefit for the users is the ability to access the web when away from home or office.

Our specific corporate mission is to become the technology and market leader in providing wireless telephone users with natural dialog access to the web.

Market Trends and Value Proposition

Our specific mission is driven by market trends:

- The web continues to grow dramatically, and the resulting blizzard of data is harder and harder to deal with. Portals are addressing the problem with a combination of search-engine technology and user personalization. Personalization reduces information bandwidth, which makes it more feasible to access that information by telephone.

- There are about 1 Billion telephone lines, but only about 200 Million PCs. Wireless telephones increased by 50% in 1998 and are selling about four times faster than PCs.

- There's a high correlation between on-line (Internet) PC users and wireless telephone users.

- Portal market caps are highly-correlated with reach and number of registered users.

- Stickier users lead to increased portal revenues via advertising and referrals.

Because there is a strong correlation between active Internet users and wireless telephone users, there is a large potential market with a simple value proposition: *more wireless air time*. This will produce direct revenues, which can be shared between the wireless carrier and the portal. Furthermore, because the users will depend more on their personalized home page, the portal will become stickier, which leads indirectly to increased revenues and higher market caps.

It may also be possible to generate revenues from audio advertising and from 900 numbers.

Technology Trends, Requirements, and Capabilities

Our mission is made feasible by these trends, requirements, and capabilities:

- Speech recognition is ready for prime time. Owing both to Moore's Law and to the steady improvement in algorithms, accurate real-time recognition can now run on mainstream computers.
- Effective dialog systems require accurate, speaker-independent automatic speech recognition (ASR) technology and natural-sounding speech output technology. Furthermore, because design is difficult; commercial success depends on having tools that facilitate rapid dialog development.
- In all three of required technology areas – ASR, natural output, and rapid dialog design – our technologies are clearly among the best in the world, and we believe that they are better than that of any potential competitors.
- We have a scalable Computer Telephony Integration (CTI) solution that will enable us to field the large systems needed for the voice-web market.

Business Development; Products and Services

Our business will be based initially on a large-scale custom system (preferably for an Internet portal and/or wireless operator), and on three products: *VoiceGateway*, *VoiceWeaver*, and *VoiceExplorer*. We discuss these briefly below and more-completely in Appendix IV; See Figure 1 for a product roadmap.

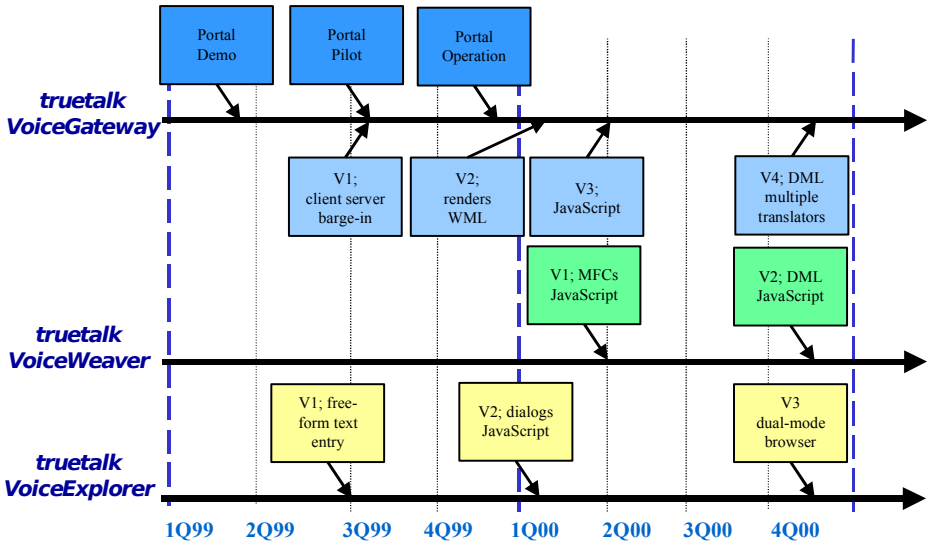

Figure 1. Product Roadmap

The company will also develop various underlying technology components, will offer various services, and will develop later products. For information on all of these, see Appendix IV.

Custom Voice Gateway for Personalized News and Information (operational in Dec. 1999)

We will start by building a custom dialog system for an internet-centric customer or combination of customers. The system will deliver personalized news and other information to wireless telephone users. Ideal customers include portals such as AOL/Netscape or Excite/@home, wireless providers such as Nextel or Vodafone/Airtouch, and news services such as Reuters. We take this approach for several reasons:

- Our engineering capabilities and momentum are such that we can begin work on such a custom system immediately.
- The project will help us to establish an Internet market presence.
- While we are developing the custom system, we will change our development tools, components, and methods to use web-centric languages, resulting in two products: *truetalk VoiceGateway*, and *truetalk VoiceWeaver* (see below).

VoiceGateway (first release, mid-2000)

Our primary product will be a web voice gateway for telephone access, particularly from wireless telephones It will offer wireless providers, Internet portals, Internet Service Providers (ISPs), and enterprises the ability to field systems such as the custom portal system, and in general to offer voice access to web sites. *VoiceGateway* will be developed in parallel with the custom portal system – indeed the final version of the custom portal system will be based on the *VoiceGateway* product.

Because is labor-intensive to build robust dialog systems, we begin by seeking customers that allow us to scale by fielding a few systems with a large number of ports/users rather than by fielding a large number of smaller systems. Stated differently, we view the voice web opportunity not as a large collection of web-sites, but rather as a small collection of high-volume portals, service providers, and enterprises.

VoiceWeaver (first release: mid-2000)

VoiceWeaver is an authoring tool for dialogs (it produces the "voice pages" rendered by *VoiceGateway*). It's a GUI-based tool for scripting dialogs using a flow diagram paradigm with property sheets. It produces DML/JavaScript that can be interpreted by *VoiceGateway* and *VoiceExplorer*. It can be used to edit any DML/JavaScript-based dialog that meets certain requirements (i.e., whether the dialog was produced by hand or by VoiceWeaver).

VoiceWeaver makes possible rapid dialog development for *VoiceGateway*, and enables smaller enterprises without their own *VoiceGateway* to create voice pages that can be accessed from any *VoiceGateway* (e.g., from one offered by an ISP). We will offer a simple version of VoiceWeaver for free, and a professional version for a price. *VoiceWeaver* will help to generate *VoiceGateway* business by facilitating the development of voice web content. It will also generate direct revenues from the sale of the professional version, which will include a rich pallet of standard modules that for example facilitate the set-up of an e-commerce site.

VoiceExplorer (first release: June 1999)

Shortly after launching *truetalk.com* (or perhaps at the same time), we will release *VoiceExplorer*, an add-on that provides voice control for Microsoft Internet Explorer. *VoiceExplorer* will later evolve into a full-scale dual-mode browser. Because browsers and browser plug-ins are generally provided free on the Internet, we do not expect any significant revenue from VoiceExplorer. We introduce it for branding purposes, consistent with the company's vision of voice-enabling the web from both telephones and desktop systems.

Eventually, both *VoiceExplorer* and *VoiceGateway* will both be able to render dialogs written in a standard Internet-centric language, herein called Dialog Markup Language (DML); this will enable *truetalk.com* to offer unified desktop and telephone solutions.

Projected Revenues, Funding Requirements

As dialog sophistication increases, we see the market evolving from Internet portals and wireless providers, to Internet enterprises (e.g., to provide voice access to information on the enterprise Intranet), and then to call centers (e.g., to automate e-commerce applications). The key is to start with applications that have a large number of users but a relatively simple dialog. For a summary of the market evolution, see Figure 2. Based on a comprehensive model developed as part of this plan, we expect the overall voice web market to reach $2B in 2004 (see Figure 3).

We expect to become a $100M company within four years (see Figure 4), and we require $30M in funding to reach this goal. We expect to make an IPO within 3-4 years, although the company would also be a natural target for acquisition.

For detailed financial projections, see Appendix III.

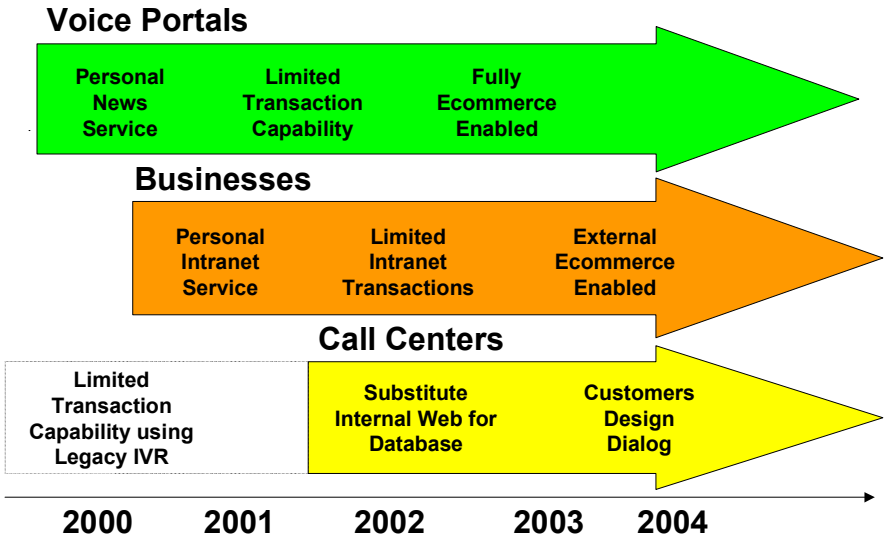

Figure 2. Market Evolution

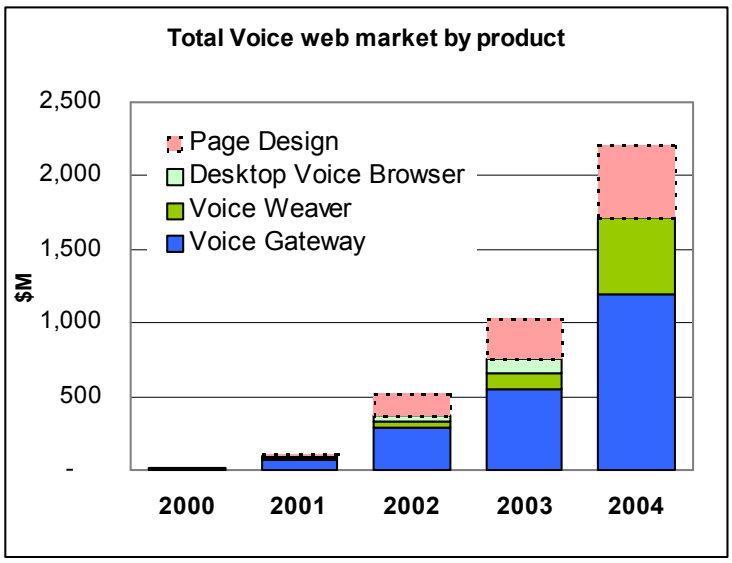

Figure 3. Voice Web Market Size

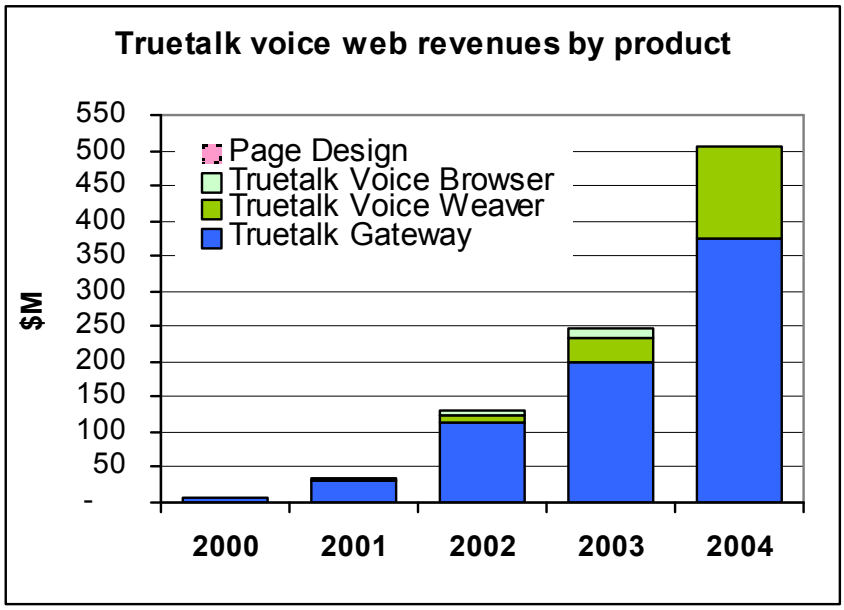

Figure 4. Projected ***truetalk.com*** Revenues

Competition

Potential competition is compared in Figure 5 across key general segments and in Figure 6 for individual companies. In all three of required technology areas – ASR, natural output, and rapid dialog design – our technologies are clearly among the best in the world, and we believe that they are better than that of any potential competitors. Furthermore, a key competitive advantage is that we combine a web-centric technical approach with a 100% dedication to the voice web mission.

Once the value of the voice web market is demonstrated, we expect that major companies in the telecom and enterprise segments (e.g., Nortel and Cisco; see Figure 5) are more likely to acquire than to build technology themselves.

Companies in the call center and desktop markets (e.g., Nuance, SpeechWorks) are more likely to compete directly (build rather than buy) and represent the likely short term competition. However, their existing business models and customer bases will prevent them from having the 100% voice web focus of *truetalk.com*.

Companies in the desktop market are likely to either build (IBM) or acquire (L&H). But the desktop companies will not have a 100% voice web focus, and moreover will not start from a technology advantage (particularly in rapid dialog design).

Segment	Company	Accurate SI Task + Dictation ASR	Rapid Dialog Design	Natural Synthesis	Scalable IVR Solution	Web-Centric Approach/Focus
Internet	*truetalk.com*	?	?	?	?	?
Telecom	**Lucent/ Spyglass** (Nortel, Ericsson, ….)	?	?	?	?	?
Enterprise	**CISCO** (3Com, …)				?	?
Call Center	**Nuance/Motorola** (Speech Works, Phillips, VCS,…)	?	?		?	?
Desktop	**IBM** (Dragon, L&H, …)	?	?	?	?	?
Others	**Microsoft**	?		?		?
	Vocalis	?			?	?

Figure 5. Competition (segments)

Segment	Company	Accurate SI Task + Dictation ASR	Rapid Dialog Design	Natural Synthesis	Scalable IVR Solution	Web-Centric Approach/Focus
Internet	*truetalk.com*	?	?	?	?	?
Telecom	Lucent/ Spyglass	?	?	?	?	?
	Nortel	?			?	?
Enterprise	CISCO				?	?
	3Com				?	?
Call Center	Nuance/Motorola	?	?		?	?
	SpeechWorks	?	?		?	
	Philips	?	?		?	
	VCS	?			?	
Desktop	IBM	?	?	?	?	?
	Dragon	?				?
	L&H	?		?		?
	Conversa	?				?
Others	Microsoft	?		?		?
	Vocalis	?			?	?
	Productivity Works, Pipebeach, …	?				?
	General Magic, DCL, Wildfire, Arabesque, …					?

Figure 6. Competition (companies)

Management Team and Board of Directors

We have the management team already in place to make *truetalk.com* a success:

- *Paul Finke (CEO).* Paul is a seasoned CEO, with background in both small and large companies, and with broad business development and financial experience. Paul will lead the overall execution of this business plan.

- *Brian Corbett (Chief Operations Officer).* Brian has a broad sales and marketing background in both large and small companies; Brian will lead the sales/marketing execution of the business plan.

- *Steve Young (Vice President, Engineering, and Chief Scientist)*. Steve is a world-leading expert in speech technology, whose teams at Cambridge University and Entropic have produced both technology advances and commercial products. Steve will lead the engineering execution of the business plan.

- *John Shore (Vice Chairman).* John combines expertise in speech and information technology with many years of experience in the speech industry; John will represent our vision to the outside world and provide internal coordination between the technical and commercial aspects of the business.

CVs of the management team are included in Appendix I.

Our Board of Directors consists of the four executives listed above, together with Hermann Hauser (Amadeus Capital) and Bandel Carano (Oak Investments). Hermann Hauser is Acting Chairman.

Summary

We believe that *truetalk.com* will become a market leader in the new voice web market because:

- Market and technology trends favor voice-enabling the internet via telephone and desktop.
- This is a new market - there is no leader.
- *truetalk.com* has a technology edge in recognition, synthesis, and rapid dialog design.
- truetalk.com will hit the ground running with a custom system that delivers personalized news and information to wireless telephone users, and then with voice web products *VoiceGateway, VoiceWeaver,* and *VoiceExplorer.*
- *truetalk.com* will focus 100% on the internet

Appendix I:

Management CVs

Appendix II:

Business Plan Presentation

Appendix III:

Financials

Appendix IV:

Products, Services, and Technology Components