

2. MARKET RESEARCH AND ANALYSIS

2.1 Market Definition

The market for the E-Pen Electronic Transcription System is the global installation of dry erase whiteboards. We estimate there to be 140 million dry erase marker boards in the world. However, the E-Pen System will require one personal computer to store the data. Therefore, the market of E-Pen users is the intersection of personal computer owners and dry erase marker board owners. According to the Computer Industry Forecasts 96Q2 report, the installed base of personal computers reported in published journals since July 1995 is 170 million, with an annual replacement rate of 40 million. We estimate that approximately 1/3 of this base represents non-commercial owners. Therefore, we estimate the market size for the E-Pen to be 66% of the 170 million personal computers existing today, or 112 million units. At an average retail price of \$419 per unit, this results in a \$47 billion global market.

2.2 Research Methodology

We reviewed several market research data sources, including International Data Corporation (IDC), Information Access Company's (IAC) Market, Business and Computer Insite databases, ABI-Inform, and extensive on-line WWW-based searching, to determine the potential markets and sales for the **e•pen™**.

As part of our ongoing marketing research we have profiled dozens of MIT students, faculty and staff to understand how consumers might react to a really new product. Our responses have been overwhelmingly positive. We believe the value proposition is real, most immediately in the professional group meeting or conference setting where it is critical that information generated in brain storming sessions be accurately transcribed. However, the ability to manipulate this stored data using existing software applications such as word processors and not graphics applications will make this System useful for a much broader market.

2.3 Market Size

As mentioned above, our market boundary is defined as the intersection of the global installation of dry erase marker boards and personal computers for commercial use, estimated by proxy to be 112 million units. At an average price of \$419 per unit we estimate the global market size for the **e•pen™** to be \$47 billion.

Concerning our technology adoption rate and market penetration, we feel our product is comparable to the QuikCam, an inexpensive digital camera personal computer peripheral, manufactured by the Connectix Corporation. Connectix's Macintosh and IBM-PC utility software products have produced impressive revenues of \$45 million in 1995, with hopes of doubling sales in 1996:

"This company has come out of the blue to take the lead in this category [digital camera] shipping nearly 200,000 digital cameras last year. Most other computer/camera solutions are expensive and require a special [interface] board. QuikCam attaches to a standard parallel port..."

[Jess Berst, PC Week, Feb. 5, 1996 [Vol. 13, No. 5, p. 57]

We believe that Connectix's success is in part due to their product positioning. Like a \$99 QuikCam, **e•pen™** is an affordable, easy-to-use peripheral that also provides more than comparable functionality without the need for additional hardware. Accordingly, we anticipate rapid adoption of our technology and fast market penetration.

2.4 Marketing Strategy

Our strategy is to develop leadership in several initial markets and leverage this leadership to the mass market. Our initial target market is business management consultants because they are team-oriented professionals who often work at a client site and collaborate to develop business strategies and other important ideas using whiteboards. In addition, these professionals often review their projects with colleagues located across the country or across the world. Therefore, the ability to electronically capture and transcribe data written on a whiteboard, and then transmit this data via the Internet or Intranet to allow for real time collaboration solves a business critical problem consultants presently face.

According to *Consultants News*, the definitive industry publication, the 40 largest consulting firms in the world generated over \$33 billion in revenues in 1994. With a global total of 120,000 professionals, the average revenue per consultant is approximately \$281,000 per year. We intend to sell direct to this market at a price point of \$1,095, for a market size of \$131 million. This compilation includes accountants, benefits, information technology and generalist/strategy consultants. We focus specifically on strategy consultants because they work in a collaborative manner that most lends itself to our product. Strategy consultants develop ideas in group brainstorming sessions. These ideas are their business product and the ability to retrace their development is valuable. In addition, the ability to use a portable system that can be easily used at a client site or the home office to directly link the writing surface to a PC and eliminate the need for further manual transcription is also valuable. For these reasons, our initial targeted niche market is strategy consulting firms.

We selected the 12 strategy consulting firms with the highest revenues per consultants [See Figure 1 on the following page]. These firms had a total of 51,042 professionals as of the August 1995 publication, providing for a market size of 51,042, or \$55.9 million. Assuming a 1% penetration rate in the first year, we project rapid adoption of our product over the following three years to achieve a market leading share of 61% by the end of the fourth year of operations. These projections account for the historic market growth of the management consulting industry of twice GNP, or approximately 6%, and a three year replacement cycle.

We anticipate several benefits to result from achieving a dominant position in this niche market:

1. securing valuable product references to our early market of executives and managers who use whiteboards;
2. developing a consulting practice for designing productivity enhancement systems using electronic transcription which will create new niche markets that we can dominate with customized whole product solutions; and,
3. refining our whole product solution for the mass market.

We anticipate that success in our targeted niche market will lead to greater adoption in the mass market of office workers with a whiteboard and a PC.

Figure 1 - Early Adopter Market Segment Profile

Consulting Market Penetration Analysis					
	Cum. Total	Market Size	Replacement	Total Market	% Penetration
Year 1	482	51,042		51,042	1%
Year 2	6,319	54,105		54,105	12%
Year 3	24,375	57,351		57,351	43%
Year 4	37,463	60,792	482	61,274	61%
Year 5	41,782	64,439	5,837	70,276	59%
Total					
Market Size Present		51,042			
Product Life		3 Years			
Annual Replacement		Assume full replacement after 3 years			
Historic Market Growth		6%			

Note	Targeted Consultants			
Management Consulting includes CPA	Total	51,042		
	Firms	Consultants	Firms	Consultants
Benefits	Andersen	27,563	CSC	2,850
Information Technology	Arthur D. Litt	1,575	Gemini	1,700
Generalist/Strategy	AT Kearney	1,007	Marakon	135
	Bain	1,030	McKinsey	3,156
Source: Consultants News 8/95	BCG	1,125	Mercer	8,251
Published by Kennedy Publications	Booz Allen	2,200	Monitor	450

2.5 Competitor Profile

The whiteboard industry is currently limited to providing “low-tech” capture mechanisms or costly “high-tech” products solutions to capture handwritten data. “Low-tech” solutions are limited to various forms of manual transcription, e.g. stenography, tracing, or photographing/photocopying the handwritten information. “High-tech” product solutions are instances of active and passive electronic whiteboard technologies. Active electronic boards are projection-screen devices where the user writes on the surface with some special stylus. Passive electronic boards make use of large, expensive, board-sized photocopying mechanisms.

As shown in the Table 1 below, electronic white boards range in price from \$500 to \$50,000: \$500 provides a 2 foot by 3 foot whiteboard electronic template, \$40,000 provides a conventional-sized whiteboard electronic template. Therefore, these existing products are either too small to be useful or too expensive to be practical. Our product is both affordable and capable of providing a writing surface more than double the size of a conventional whiteboard. Not only do we aim to provide the same, if not several more, benefits -- we aim to do so at a retail price point of approximately \$500.

Table 1 - Competitor Profiles

<u>Product Name</u>	<u>Manufacturer</u>	<u>Features</u>	<u>Retail Price</u>
Ibid	Microtouch	2' x 3' electronic whiteboard	\$499
LiveBoard	LiveWorks, Xerox subsidiary	67" rear projection screen	\$32,000 - \$42,000
Smart Board	Smart Technologies	72" electronic whiteboard	\$4,899
Softboard Systems; 200 & 400	Microfield Graphics (** 7/97: 3M is an OEM Manufacturer)	5' x 8' portable electronic whiteboard; Self enclosed 35" x 47" rear projection system	>\$3,000
e•pen™	Virtual Ink	Scaleable, portable, system to retrofit conventional white board, 10 meters x 16 meters	\$599 - \$1,095

2.6 e•pen™'s Competitive Advantages

The **e•pen™** provides several advantages over competing products:

1. It is a comprehensive data acquisition and electronic transcription system that is portable and will not necessitate infrastructure changes. Electronic whiteboards, in contrast, are not readily portable, store data as bitmaps and often require specialized support hardware. The **e•pen™** System is designed to retrofit existing boards and not require any major modification to a user's normal writing pattern or environment
2. It is WWW-ready with additional software to provide data transcription directly to a web site via a company intranet or the Internet. **e•pen™** can also be utilized with other web enabled technologies. Some competing products act as multi-conferencing tools but also at substantially higher costs.
3. It will conform to standard input specifications, making it both Java and network-computer compatible, unlike the competition. Electronic white boards are not yet included in the specifications for Java and must utilize proprietary drivers. Therefore, as the computer industry trends towards Java-based network computing, electronic whiteboard manufacturers will have to endure the slow process of specification adoption Java and conform their product to existing input specifications. In contrast, our product is designed to be Java and network-computing compatible. This is significant because many sources estimate that there will be over 40 million network computers in the next 5 years. **e•pen™** permits this market to adopt our technology.
4. It is an order of magnitude less expensive than the most relevant competitor. **e•pen™** will be marketed at a retail price of approximately \$500, while electronic marker boards retail for approximately \$3,500. Plus, electronic whiteboards may require expensive infrastructure changes, such as removing existing white boards and installing an electronic board. So, while cost advantages are not sustainable competitive advantages, this inherent cost advantage should last for some time.
5. It is substantially smaller and easier to use than the competing products. As a result, the ease of use, openness of platforms, size and portability will enable **e•pen™** to reach a far broader market than electronic whiteboards. We believe that **e•pen™**'s market is the intersection of the global installation of dry erase white boards and personal computers.

6. Its core technology is patentable because position detection based imaging systems have not been developed for transcription. We intend to leverage this core technology across a broad product platform as new applications and uses arise.

2.7 Marketing Plan

We believe there is a market for an inexpensive handwriting transcription tool with software modules to provide handwriting recognition, web-accessibility, and data teleconferencing capabilities. Our marketing strategy is to position the **e•pen™** as an affordable alternative to electronic whiteboards, that also offers portability, scalability and greater ease of use. We intend to offer two **e•pen™** products, a base model retailing at \$599 and a higher-end model with a full complement of our software modules for \$1,095. Individual software modules will retail between \$200 and \$250.

We will distribute our base model, which will come bundled with handwriting recognition software and necessary drivers, through all major channels including distributors such as Merisel and Ingram, as well as retailers such as CompUSA, Egghead Software, Computer City, Staples, Office Max and other office discount office supply retailers. The E-Pen System will retail for \$599, with a retailers' discount of 30%, or wholesale prices of \$419 for the base model.

We will direct sell to consulting companies the higher end model, which will be bundled with teleconferencing, web direct transcription and data management software, for \$1,095. In addition, depending on the size of the order, we will provide site licenses for our software and the hardware at negotiated bulk rates to volume purchasers. We will continue to seek out opportunities for customizing the **e•pen™** to address business problems faced by specific industries and provide productivity enhancement consulting and customized product applications.

Lastly, we intend to offer promotional packages such as rebates and experiment with software product bundles to introduce new products and extract more consumer surplus. Follow on products include E-BRUSH, an extension of the basic pen idea that will allow artists to digitally capture their brush strokes on a surface.

Administratively we are presently interviewing candidates to serve as director of sales and oversee regional sales districts and coordinate sales efforts within these regions. We plan to support an 11 member sales and customer service staff by the end of the fourth year of operation. On the marketing side, we have recently added a marketing director to develop our distribution channels and ultimately oversee a staff of four product managers. Please refer to page 7 (The Hiring Plan) of the financial statements in the Appendices for more detail.