

DIGIMARC CORP  
Form 10-K/A  
December 08, 2003

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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

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**FORM 10-K/A**

**Amendment No. 1**

(Mark One)

**Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

**For the fiscal year ended December 31, 2002**

**OR**

**Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

**For the transition period from \_\_\_\_\_ to  
Commission File Number 000-28317**

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**DIGIMARC CORPORATION**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**94-3342784**  
(I.R.S. Employer  
Identification No.)

**19801 SW 72nd Ave, Ste 250, Tualatin, Oregon 97062**  
(Address of principal executive offices) (Zip Code)

**(503) 885-9699**

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: **NONE**

Securities registered pursuant to Section 12(g) of the Act:

**Common Stock, \$0.001 par value**

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Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this

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Form 10-K or any amendment to this Form 10-K. o

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes  No

The aggregate market value of Common Stock held by non-affiliates of the registrant, based on the closing price for the Common Stock on The Nasdaq National Market on the last business day of the registrant's most recently completed fiscal second quarter (June 28, 2002), was approximately \$148.8 million. Shares of Common Stock beneficially held by each officer and director have been excluded from this computation in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for any other purposes.

As of February 28, 2003, there were 17,664,966 shares of the registrant's Common Stock outstanding.

## Documents Incorporated by Reference

Portions of the registrant's proxy statement pursuant to Regulation 14A (the "Proxy Statement") for its 2003 annual meeting of stockholders are incorporated by reference into Item 5 of Part II and Items 10, 11, 12, and 13 of Part III of this Annual Report on Form 10-K. The registrant will file the Proxy Statement not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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## EXPLANATORY NOTE

This Amendment No. 1 on Form 10-K/A amends our Annual Report on Form 10-K for the fiscal year ended December 31, 2002, as filed with the Securities and Exchange Commission on March 31, 2003, and is being filed for the purpose of providing additional details to our disclosures included in Item 1 ("Business") under the captions "Overview," "Products, Services and Licensing" and "Technology and Intellectual Property" and Item 7 ("Management's Discussion and Analysis of Financial Condition and Results of Operations") under the captions "Overview" and "Operating Expenses" pursuant to comments we received from the Securities and Exchange Commission in connection with its review of our periodic filings. We also have included a revised Item 15 ("Exhibits, Financial Statement Schedules and Reports on Form 8-K") to reflect the filing of certain additional exhibits in connection with this Amendment No. 1 on Form 10-K/A. This amendment is not intended to revise other information presented in our Annual Report on Form 10-K for the fiscal year ended December 31, 2002 as originally filed and all such other information in the original filing, which remains unchanged, has not been updated to reflect events occurring subsequent to the original filing date.

This amendment speaks as of the date of our original Annual Report on Form 10-K for the fiscal year ended December 31, 2002, except for the certifications, which speak as of their respective dates and the filing date of this amendment.

This Amendment No. 1 on Form 10-K/A contains certain forward-looking statements. The words "expect," "anticipate," "intend," "plan" and similar expressions identify forward-looking statements. These statements are subject to risks and uncertainties. Actual results could differ materially from those discussed here. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in "Risks Related to Our Business," "Risks Related to Our Markets" and elsewhere in the Annual Report on Form 10-K for the fiscal year ended December 31, 2002, as filed with the Securities and Exchange Commission on March 31, 2003. We have not updated in this Amendment No. 1 on Form 10-K/A the risk factors or forward-looking statements included herein.

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## ITEM 1: BUSINESS

### Overview

Digimarc was incorporated in 1995. We believe we are one of the leading providers of patented digital watermarking technologies that allow imperceptible digital codes to be embedded in all forms of media content, including photographs, movies, music, financial instruments, personal identification documents, and product packages. The embedded codes within various types of media content can be detected and read by software or hardware detectors in personal computers and other digital processing devices. Directly and through our licensees, we believe we have the broadest intellectual property patent portfolio and commercial deployment of watermarking-based applications amongst entities of

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which we are aware, including use of such intellectual property by an international consortium of leading central banks and more than five thousand enterprises and individuals who use our products to identify and manage their image collections.

We also believe we are one of the leading suppliers of secure personal identification systems, providing more than 60 million personal identification documents and driver licenses per year. We supply the issuance systems for the majority of driver licenses produced in the United States ("U.S.") and provide all or part of the issuance systems for national identifications, voter identifications, and driver licenses in more than twenty non-U.S. countries. We understand that our next-closest competitor with regard to secure personal identification systems held contracts with no more than an estimated 15 driver license issuing authorities in the United States as of December 31, 2002. We are developing and marketing enhanced security for personal identification documents enabled by our proprietary digital watermarking technology.

The majority of our revenues come from multi-year contracts with government agencies, including U.S. state departments of motor vehicles, federal agencies, and central banks.

Since the introduction of our first watermarking product in 1996, we have built a broad technology platform with a wide range of applications. Our initial products were designed to help photographers and stock photography agencies deter the use of commercially-available imaging software to produce unauthorized high quality copies of their photographs. We later developed image commerce applications that allowed our customers to use the persistent copyright data in their photographs to track the display of these photographs in various places on the Internet and provide direct linking from the photographs to electronic licensing sites, permitting enhanced surveillance for market research, copyright enforcement, and greater convenience in licensing.

In 1997, we began development of a system to deter the use of personal computers in counterfeiting banknotes and also began work on a solution that would deter movie piracy, both based on our core digital watermarking technologies. The banknote anti-counterfeiting project continues to be a significant element of our business and financial performance. The anti-piracy initiative evolved into a consortium known as the "VWM group" that includes several leading consumer electronics and information technology companies. The proposed anti-piracy solution by the VWM group is being considered by various industry standards organizations, but has not yet been adopted.

Shortly thereafter, we began developing an innovative marketing use of our technology in printed materials, which we refer to as "Digimarc MediaBridge". The MediaBridge system began operation in the summer of 2000. It enables imperceptible digital codes to be embedded within printed media, such as magazine advertisements and articles, direct mail, coupons, product packaging, stationery and envelopes, trading cards, catalogs, credit cards, bank cards and business cards. When recognized by web cameras or scanners enabled by our patented reader technology, the embedded codes automatically link the user directly to the specific Internet destination chosen by the producer of the printed media.

In December, 2001, we acquired the assets and assumed certain liabilities of the U.S. large government programs identification systems and international digital identification systems businesses of

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Polaroid Corporation and certain other affiliated entities of Polaroid Corporation (collectively known as the Large Government Program Identification Business or "LGP"). LGP provided secure personal identification card systems to the majority of state departments of motor vehicles in the United States, as well as to various non-U.S. government agencies. LGP was integrated into Digimarc through Digimarc ID Systems, LLC and its affiliates. Following the acquisition of LGP, the personal identification systems business has become our dominant source of revenue.

Financial information about geographic areas is incorporated by reference to Note 8 of our consolidated financial statements set forth on pages F-1 to F-24 of our Annual Report on Form 10-K.

We make available through our website at [www.digimarc.com](http://www.digimarc.com) our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to these and other reports filed or furnished by us pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after we file such materials with the Securities and Exchange Commission.

A summary of our current product and service offerings and licensing activities is listed below:

### **Products, Services and Licensing**

We have aligned our management with five growth opportunities: secure personal identification systems; financial systems; defense and intelligence; commercial solutions; and licensing.

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### *Secure Personal Identification Systems*

Digimarc is a leading supplier of U.S. state driver license issuance systems. A full driver license issuance system includes all necessary hardware, software, and consumables (such as ink, laminate, and adhesives) to produce driver licenses for an issuing authority. At December 31, 2002 we had contracts with the majority of U.S. state driver license issuing authorities to supply and maintain their driver license issuance systems. We also have relationships with various non-U.S. government agencies regarding the production of identification cards, including driver licenses, voter identification cards, and national identification cards.

In the United States, we are generally the prime contractor, providing full issuance systems to state departments of motor vehicles. When we provide a full issuance system to a customer, we retain title to all assets associated with the system and are responsible for maintaining the system over the contractual period. We are paid as cards are produced on a price-per-card basis over the life of the contract.

In non-U.S. markets, where we provide driver licenses, national identification, and voter identification systems, services, and components in partnership with local card producers, security printers, system integrators, and others, we may serve as prime contractor or sub-contractor, depending on the circumstances. When we provide a partial driver license issuance system to a customer, we transfer title of the assets to the customer upon delivery and typically have no further obligations. We are paid on standard billing terms upon delivery of the assets. When we provide services for a partial driver license issuance system, we are paid on standard billing terms upon performance of the services.

In December 2002, we announced the initial deployment of a large scale facial biometrics system to the Colorado Department of Revenue ("Colorado DOR"). Under their enhanced license issuance program, selected driver license applicants are compared with more than 10 million Colorado DOR records on file to identify possible duplicates and aid in investigation of identity fraud. Colorado has been using Digimarc and LGP's technology since 1994 to issue over 1.2 million driver licenses annually.

We recently began marketing various enhancements to the security of identification documents enabled by digital watermarking. In addition to driver licenses, we have been working with various U.S.

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and non-U.S. governmental authorities and third party suppliers to develop and deploy applications to secure and enhance the security of traveler identification documents.

For the years ended December 31, 2002, 2001, and 2000, revenue from secure personal identification systems made up 88%, 11%, and 0% of our consolidated revenues, respectively.

### *Financial Systems*

We have relationships with a number of financial institutions that are involved in the creation or protection of high-value documents. These relationships include a development and license agreement with an international consortium of leading central banks related to deterring the use of personal computers in the counterfeiting of banknotes. This agreement accounted for 56% and 76% of our revenues in 2001 and 2000, respectively. It now accounts for less than 10% of revenues due to the LGP acquisition. We intend to pursue opportunities to expand our relationship with the consortium and individual central banks and security printers to develop other sources of revenue. We are also pursuing opportunities in the broader banking and financial services industry to address anti-fraud needs of financial institutions with our digital watermarking and related technologies. We typically provide development services, on a time-and-materials basis, to financial systems customers.

### *Defense and Intelligence*

In 2002, we began working with U.S. government agencies, including the Air Force Research Laboratory Information Directorate in Rome, New York in matters relating to national defense. We typically provide development services, on a time-and-materials basis, to defense and intelligence customers.

### *Commercial Solutions*

Our commercial solutions address a range of needs, including: communicating copyrights, enabling online licensing, and facilitating digital rights and asset management for photographs; deterring counterfeiting, tampering, and diversion of consumer packaged goods; and authenticating and deterring counterfeiting and fraud against secure personal identification documents.

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Digimarc ImageBridge watermarking solutions provide notice of copyrights and enhance licensing opportunities for producers and distributors of commercial photographs. ImageBridge is available in a variety of configurations, including plug-ins bundled with image-editing products from leading suppliers such as Adobe, JASC and Corel. The plug-ins enable embedding, and automatic detecting and reading, of digital watermarks in images, allowing photographers, web designers, stock photo agencies and other image distributors to identify and license copyrighted materials. Software development kits are available to facilitate integration of ImageBridge technology into third party rights and asset management products and enterprise applications. Revenues from this product line are primarily from subscriptions to the ImageBridge service, which provides registry and linking capabilities. We also offer subscriptions to an Internet search service called MarcSpider which searches parts of the public Internet for our watermarks, reporting to the owner when and where they were found. MarcSpider gives Web content developers, photographers, stock photography agencies, and publishers of entertainment, sports and news images the means to track dissemination of images and to enforce copyrights and licenses.

Digimarc MediaBridge provides the means to link directly from printed materials, including product packaging, stationery and envelopes, trading cards, magazine advertisements, articles, covers and subscription cards, direct mailers, debit and credit cards, greeting cards, coupons, catalogs, tickets and business cards, to specific Internet sites by showing the enabled document to an imaging device, such as a web camera or other imaging device, equipped with our reader software. MediaBridge has not yet attained significant adoption. Development of the market for MediaBridge applications is largely dependent on broad scale adoption and use of web cameras and other imaging devices

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connected to networks. In the long term, we believe that Digimarc MediaBridge will create new communications capabilities for media content that can promote and enhance e-commerce.

Digimarc Excalibur is our newest commercial solutions application. It is intended to deter counterfeiting, tampering, and diversion of consumer packaged goods. We have been engaged in research and development with International Paper and others in the packaging market for several years. Initial marketing efforts began in late 2002. Excalibur is designed to help inspectors to quickly and easily determine if a suspect package is authentic. This covert packaging security feature can also be used for source tracking for in-channel inspection and forensic analyses. With Excalibur copy detect technology there are no associated physical material costs, equipment overhead or special inventory tracking of inks and laminates.

### *Licensing*

We license our technology and patents for a variety of applications relating to video, audio, image content, and printed materials:

In video, we participate in an initiative known as the "VWM group," comprised of Macrovision Corporation, Koninklijke Philips Electronics N.V., Sony Electronics, Hitachi, NEC, and Pioneer, that is proposing a solution to help motion picture studios to protect their copyrights and enable new business models. The proposed copy prevention and play control solution would protect video programming on videocassettes, DVDs, or cable or satellite transmissions from unauthorized copying to recordable DVDs, DVHS and multimedia personal computers. In another video watermarking application, Digimarc has licensed Philips' Video Watercast System for video broadcast monitoring, asset management, copyright communication, forensic tracking, remote triggering, and other uses in consumer electronics products.

In audio, we have licensed to Verance Corporation use of digital watermarking for copy prevention and play control solutions to protect music and other audio content, akin to protection of movie copyrights described above. We also licensed to Verance Corporation use of our technology for broadcast verification of television and radio advertising, programs, and music. Separately, we have issued licenses to Activated Content for forensic tracking of pre-release music and issued licenses to Koninklijke Philips Electronics N.V. for audio watermarking applications.

In digital imaging and printed materials, we have a number of licensees, including: Signum Technologies which is licensed for copyright communication and authentication solutions; and DigiTreal in Korea which is licensed for MediaBridge-style solutions in its local market.

### **Technology and Intellectual Property**

We believe we are one of the leading owners of intellectual property relating to digital watermarking and one of the leading suppliers of commercial applications of this technology. Our watermarking and related technologies are supported by a broad patent portfolio covering a wide range of methods, applications, and system architectures. Our commercial applications are used by more than five thousand enterprises and individuals to identify and manage their image collections and to, among other things, protect their photos, financial documents, movies, music, publishing data, television images, identification documents, packaging and sensitive data, representing a broad swath of the entire spectrum of media content.

Various methods for embedding digital codes within video, audio, and images, whether such content is rendered in analog or digital formats, form the foundation of our intellectual property. The digital codes are embedded by making subtle modifications to the fundamental elements of the content itself, generally at a signal processing level. The changes necessary to create these codes is so subtle that they are generally not noticeable by people during normal use. Because the message is carried by

the content itself, it is file-format independent. The message can survive most normal compression, edits, rotation, scaling, re-sampling, file-format transformations, copying, scanning and printing. We have developed a variation of our core technology that is intentionally not robust to such common actions, for use in authentication solutions.

To protect our significant efforts in creating these technologies, we have implemented an extensive intellectual property protection program that relies upon a combination of patent, copyright, trademark and trade secret laws, nondisclosure agreements and other contractual provisions. As a result, we believe we have established one of the world's most extensive patent portfolios in the field of digital watermarking, personal identification, and related technologies, holding rights to 78 U.S. issued patents and having over 300 U.S. patent applications on file as of December 31, 2002. We have averaged almost 100 patent filings per year over the last four years. We understand that the next-closest filer of patents related to digital watermarking has averaged less than 40 patent filings per year over the last four years. We also understand, based on our periodic reviews of published patent literature and public patent filing records, that we currently hold more digital watermarking patents than any other person or entity in the world. Based on a review of published patents, we also believe that we hold some of the earliest invention dates on issued patents in the field of digital watermarking. Separately, we own registered trademarks in both the U.S. and other countries and have applied for other trademarks and have licensed rights to other technologies. We seek to protect new product applications through existing patents and patent applications and filings for new patents.

We continue to develop and broaden our portfolio of patented technologies, including digital watermarking and related applications and systems, and other technologies related to secure personal identification systems acquired in the LGP acquisition.

Although we devote significant resources to developing and protecting our technologies, and periodically evaluate potential competitors of our technologies for infringement of our intellectual property rights, these infringements may nonetheless go undetected or may arise in the future. We expect that infringement claims may increase as companies become more concerned with protecting their content from electronic copying.

### **Competition**

The markets in which we compete are diverse. We face competition in the overall digital watermarking market as well as in each of the market segments where our products and services compete. In many cases, we are seeking to exploit market opportunities that are emerging, highly competitive, fragmented and characterized by rapidly changing technology and evolving standards. In others, we face entrenched competition with greater financial and operational resources.

We believe that the principal competitive factors in the markets for our products are functionality, interoperability with major hardware and software platforms, and the costs, time to implement, and support services associated with the installation of new products and services. We have experienced and expect to continue to experience competition from enterprises in high-technology industries that are developing watermarking capabilities of their own, many of whom have significantly greater financial, technical and marketing resources than we have.

Digimarc's major competition in digital watermarking comes from the internal development efforts at consumer electronics, imaging, and information technology companies such as Canon, Sony, Philips, NEC, IBM, Microsoft, Matsushita, HP, Kodak, and Toshiba. Our watermarking technology competes with a variety of alternative technologies. In audio and video entertainment, copyright protection applications of our licensees compete with a variety of digital rights management solutions from companies such as Microsoft, Toshiba, News Corporation, and Fidelio (a Sony/Philips-led acquisition of InterTrust).

Competition in personal identification systems comes from systems integrators, such as IBM, Unisys and Viisage; security printers such as De La Rue; card and materials manufacturers, such as Datacard and 3M; and biometrics vendors, such as Sagem Morpho. As the digital identification market receives more attention due to general security concerns in the United States and abroad, additional competitors may enter

the market. The global market for secure personal identification systems is complex. In non-U.S. markets, depending on circumstances, our partners may compete with us and our competitors may partner with us. In some situations, we compete with vendors of "smart cards" containing embedded computer chips. The secure personal identification cards that we produce generally do not contain such chips, although we have the capacity to produce smart cards if requested by customers.

Most competition in secure documents, including but not limited to secure personal identification and banknotes, comes from traditional security features, such as holograms, laser engraving, security threads, special inks, and laminates; and machine-readable features, such as Scrambled Indicia, radio frequency identification tags, two dimensional barcodes, Glyphs from Xerox, conductive inks, and data-carrying magnetic stripes. Our products compete with products containing such features for a share of the document production budget established by customers for security features.

Our current and potential competitors, irrespective of the technology they use or intend to use, may have well-established relationships with current and potential customers of ours, extensive knowledge of the markets targeted by us, better name recognition, and more extensive financial, development, sales and marketing resources than we have. Therefore, our competitors' technology, products and services may achieve greater market acceptance than those offered by us.

Our business generally is characterized by extensive research efforts and rapid technological change. To remain competitive, we need to continue research on enhancing the cost effectiveness and breadth of application of our watermarking algorithms and embedding and detection technologies. Company-sponsored research, development and engineering expenditures for 2002, 2001, and 2000 were \$9.1 million, \$6.8 million, and \$4.3 million, respectively. We also incur research, development, and engineering costs that are reported as part of cost of revenue as they relate to products and services provided to third parties. In addition, investments associated with protection and enforcement of our intellectual properties (included in general and administrative expenses) were \$3.5 million, \$4.0 million, and \$2.1 million for 2002, 2001, and 2000, respectively.

#### **Employees**

As of December 31, 2002, we had 402 full-time employees, including 59 in sales, marketing, technical support and customer support; 148 in research, development and engineering; 49 in finance, administration, information technology and legal; and 146 in field operations. We also had 51 contract workers at December 31, 2002. Our future success will depend, in part, on our ability to continue to attract, retain and motivate highly qualified technical and management personnel, for whom competition is intense. Our employees are not covered by any collective bargaining agreement, and we have never experienced a work stoppage. We believe that our relations with our employees are good.

#### **Risks Related to Our Business**

*Uncertainties associated with the integration of the Digimarc ID Systems business into our existing business could cause an interruption or loss in momentum in our existing business and operating activities and the business and operating activities of the business acquired and, if material, might harm us*

The integration of the operations of Digimarc ID Systems, LLC and its affiliates (collectively referred to as "DIDS") into our business involves a number of risks, including:

Problems associated with integrating operations and personnel of DIDS into Digimarc;

The loss of resources for our existing business resulting from the diversion of these resources to facilitate the integration of DIDS into Digimarc;

Problems associated with integrating the respective equipment, networks and technologies, financial and information systems and brand names of Digimarc and DIDS;

Difficulties associated with successfully combining the different corporate cultures of Digimarc and DIDS;

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Inherent problems surrounding the coordination of geographically separated facilities and work forces;

Risks associated with integrating a number of component technologies, provided from different vendors and subject to possible interruptions in supply;

Our relatively limited involvement to date in markets in which we may not have all of the necessary patent or other intellectual property rights to compete;

Management challenges associated with the integration of Digimarc and DIDS;

Difficulties associated with the coordination of the sales, marketing and service development efforts of DIDS with our existing business;

Difficulties common to the assimilation of new management personnel with disparate business backgrounds into an existing business; and

Difficulties in maintaining consistent standards, controls, procedures and policies across a larger business with various new focuses.

The process of integrating DIDS' operations could cause an interruption or loss in momentum in our business and operating activities and, if material, could harm our business. Moreover, in the course of the integration and transition effort, we may discover facts or circumstances that were not known or apparent prior to the date we acquired the assets from Polaroid Corporation, Polaroid ID Systems, Inc. and some other affiliated entities of Polaroid Corporation or during our due diligence review of these assets prior to the acquisition. These facts and circumstances could result in delays or interruptions in the integration and transition and may have other negative effects which, if material, could adversely affect our business.

*We may incur additional charges related to the integration of the Digimarc ID Systems business into Digimarc which might exceed our expectations and materially affect our business, financial condition and results of operations*

In connection with the acquisition of DIDS, we may incur charges or capital expenditures associated with integrating the acquired business with our existing one. These charges may include:

Costs relating to the elimination of duplicate systems and facilities, possible severance and employee relocation, and other integration costs;

Building out DIDS' existing infrastructure;

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Replacing fidelity and performance bonds previously held by Polaroid with Digimarc bonds; and,

Consolidation of some of DIDS' operations in the Fort Wayne, Indiana facility.

While we have completed a full year's worth of transition activities, these activities and the risks associated with them will continue through the next few quarters.

While many of the transition activities are complete or nearing completion, the aggregate amount of additional expenses, if any, is not yet determinable, but could be significant. In addition, we cannot assure you that we will not incur additional charges in subsequent quarters to reflect costs and residual risks associated with the integration of DIDS' operations. Adverse developments could include employee turnover,



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problems in integrating new financial and information systems, problems associated with the relocation to new office space, and remaining film and other dependencies involving Polaroid. Any remaining costs that exceed our expectations could materially affect our business, financial condition, and results of operations.

*We may not realize the synergistic, strategic, and financial benefits expected from the acquisition of DIDS*

We cannot assure you that we will realize the synergistic, strategic and financial benefits sought through the acquisition of DIDS. Although we view this acquisition as an opportunity to significantly enhance the security and usefulness of drivers' licenses and other DIDS products, we cannot assure you that we will be successful in combining our current technological applications and product offerings with those of DIDS or that the combined product offerings will be acceptable in the marketplace. Factors that could affect acceptance of these combined product offerings are changes in government regulations and industry standards, and increased competition from DIDS' competitors who may develop superior or alternative technology that is more widely acceptable in the marketplace. We cannot assure you that, if we fail to realize the synergistic, strategic and financial benefits sought through the acquisition of DIDS, the resulting effect will not harm our business, operating results and financial condition.

*We have a history of losses and we cannot assure you that we will achieve profitability*

We have incurred significant net losses since inception and incurred net losses of \$8.7 million in 2002. We have not been profitable and cannot assure you that we will realize sufficient revenue to achieve profitability. Our accumulated deficit as of December 31, 2002 was approximately \$56.1 million. In order to achieve profitability, we will need to generate higher revenue than we have in prior years while controlling expenditures related to those higher revenues. Even if we achieve profitability, we may not be able to sustain or increase our profitability. If our revenue grows more slowly than we anticipate, or if our operating expenses exceed our expectations, our operating results will be harmed and we may not be profitable.

*Because some of our revenue models relating to anticipated products and services are under development and the corresponding anticipated products and services may fail to attract or retain customers, we cannot assure you that anticipated products and services will generate or sustain revenues*

Our business involves embedding digital watermarks in traditional and digital media, including identification documents, secure documents, and images distributed on the Internet, and licensing our intellectual property. Through 2001, our revenue stream was based primarily on a combination of development, consulting, subscription and license fees from copyright protection and counterfeit deterrence applications. Beginning in 2002 and for the foreseeable future, we have seen, and we anticipate, that the majority of our revenues will be from government and private sector customers for security-related applications relating to secure personal identification, copyright protection, and counterfeit deterrence to government and private sector customers. We have not fully developed revenue models for our future applications and licensing endeavors. In addition, because some of our

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products and services are not yet fully established in the marketplace and because such products and services will be sold in new and undeveloped markets, we cannot be certain that the pricing structure and marketing for them will be effective. We cannot assure you that our anticipated products and services and licensable intellectual property will be able to compete effectively against other alternative technologies in our target markets or that we will be able to compete effectively against current or future digital watermarking suppliers in terms of price, performance, applications or other features of their technologies. In addition, as we develop models for generating revenue, they may not be sustainable over time, and as a result, our business, operating results and financial condition may seriously be harmed.

*The loss of any large contract may seriously harm our business, operating results and financial condition*

Contracts between government agencies and DIDS have varying duration, averaging four to five years in length, after which the government agency can re-open the contract for competitive bidding. If we were to lose a contract, in addition to the loss of revenue and margin on a prospective basis, we could also incur accelerated amortization expense or impairment of tangible or intangible assets related to the customer. The loss of one or more large contracts with governmental agencies may seriously harm our business, operating results and financial condition.

We have historically derived a substantial portion of our revenue from a consortium of leading central banks with which we have a development and license agreement related to banknote counterfeit deterrence. Since the acquisition of DIDS, revenue generated from the consortium has decreased as a percentage of our total revenue to below 10% for 2002. Nevertheless, the loss of this consortium as a customer could harm our business, operating results and financial condition. The consortium has the right to terminate the agreement prior to the

expiration of its term. Unless the consortium exercises this right, we expect to earn revenue under the agreement through at least 2003, which concludes the current agreement with the consortium of banks. While we believe that the agreement will be renewed for future periods, we cannot guarantee that this will happen.

Under the terms of our agreement with the consortium, we are obliged to keep the identity of the participating banks, design of the system and timetable for deployment confidential. Any change in our relationship with the consortium, including any actual or alleged breach of the contract by either party or the early termination of, or any other material change in, the agreement could seriously harm our business, operating results and financial condition.

*Our future growth will depend to some extent on our successful implementation of our intellectual property in solutions provided by third-party partners*

Some of the products, services, and licensing of intellectual property that we intend to provide in the future will rely on the successful implementation of our technology, including our reader technology, by third-party software developers and original equipment manufacturers. We anticipate maintaining and entering into agreements with third-party vendors to create, promote and service products that incorporate, embed, integrate or bundle our technologies. If we fail to obtain partners that will incorporate, embed, integrate or bundle our technologies, or these partners are unsuccessful in their efforts, our business, operating results and financial condition could be seriously harmed. In addition, if our technologies do not perform according to market expectations, our business may be seriously harmed.

*We have a limited operating history and are subject to the risks encountered by early-stage companies*

We incorporated in January 1995. Accordingly, we have a limited operating history, and our business and prospects must be considered in light of the risks and uncertainties to which early-stage

companies in new and rapidly evolving markets, such as digital watermarking, are exposed. These risks include the following:

We may be unable to develop revenue models that generate and sustain revenue because our current and anticipated products and services may be unable to attract or retain customers;

The intense competition and rapid technological change in our industry could adversely affect the market's acceptance of our products and services;

We may be unable to build and maintain our brand;

We may be unable to develop and maintain the strategic relationships upon which we currently rely for the majority of our revenue; and

Our quarterly operating results may fluctuate significantly.

We cannot assure you that our business strategy will be successful or that we will successfully address these risks and the other risks described elsewhere in this report.

*A significant portion of our business depends on large public sector contracts, which can be terminated at the convenience of the government authority, are subject to a variety of requirements and influences and may only result in one-time revenue without potential for renewal*

A significant portion of our business depends on a limited number of large public sector contracts. Government contracts are generally subject to termination for convenience or lack of appropriation at the determination of the subject agency. Further, some government contracts may be one-time events, such as in the case of some personal identification systems in foreign markets involving voter registration programs. In such cases, we may generate substantial revenues without renewal. Moreover, government contracts result from purchasing decisions made by public sector agencies that may be subject to political influence, unusual procurement procedures, strict legal requirements, budget changes and

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cutbacks during economic downturns, variations in appropriations cycles, and protests of contract awards. Additionally, some governmental authorities require performance or fidelity bonds that we are obligated to maintain during the life of the contract. Often, the terms of these bonds require that we maintain large restricted cash reserves as a guarantee, reducing our ability to use these funds for our other business purposes. The size, nature and purpose of, and the risks and uncertainties associated with, public sector contracts can impact the predictability of our quarterly results and may potentially have a material negative effect on our financial position, results of operation or cash flows.

*The majority of our revenues are subject to government procurement processes that are subject to unpredictable delays or unexpected changes*

We derive substantial portions of our revenue from government contracts which are subject to periodic open competitive bids. The timing of such bids is solely within the discretion of the governmental authority. Consequently, large components of new revenue are tied to procurement schedules, which could shift as the needs of the related government procurement agencies change. Many U.S. state customers are facing budget cuts, and some international customers are facing debt crises, introducing added uncertainty. Any shift in the government procurement process, which is outside of our control and may not be predictable, could result in delays in bookings forecasted for any particular financial period, could impact the predictability of our quarterly results and may potentially have a material negative effect on our financial position, results of operation or cash flows.

*Our future quarterly operating results may not meet analysts' expectations and may fluctuate significantly, which could adversely affect our stock price*

Our quarterly operating results have fluctuated significantly in the past and may do so in the future. Our operating results are difficult to forecast because of our limited operating history.

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Accordingly, you should not rely on quarter-to-quarter comparisons of our historical results as an indication of future performance or any trend in our performance. If our quarterly operating results do not meet the expectations of analysts or investors, the market price of our common stock will likely decline.

Our quarterly results may fluctuate in the future as a result of several factors, many of which are outside our control, including:

The timing, introduction and successful commercialization of our new products and services;

The loss of or reduction in revenue from any large customer;

The market's acceptance of our products and services;

Our ability to establish and maintain strategic relationships;

The potential costs of litigation and intellectual property protection;

The operating costs and capital expenditures related to the expansion of our business operations and infrastructure, domestically and internationally, including the hiring of key personnel and new employees;

The introduction of similar or substitute technologies by our competitors;

The costs and timing of completing the integration of DIDS into our existing business;

The unpredictability and irregularity of our revenue from government contracts due to political, budgetary appropriations, purchasing and delivery constraints;

The timing of future licensing revenue;

The costs associated with marketing arrangements that we enter into during early market development; and,

The failure or delay in efforts to establish industry standards involving watermarking.

In addition, because the markets for certain of our products and services are new and rapidly evolving, it is difficult for us to predict certain aspects of our future financial results. Our research and development, sales and marketing efforts and business expenditures are based in part on our expectations regarding developments involving counterfeiting and piracy, as well as other security and intelligence needs, and on our estimates as to the use of digital watermarking as a solution to those problems. To the extent that these predictions prove inaccurate, our revenue and operating results will fluctuate from our anticipated results.

*The markets for digital watermark applications are new and developing*

Digital watermarking is a new and developing technology. Our success depends on the acceptance of this technology and the adoption of applications in areas such as digital media commerce, counterfeiting and piracy deterrence, self-authentication of documents, and security and intelligence applications. The markets for products and services using digital watermarks are evolving and are characterized by an increasing number of market entrants who have introduced or developed products and services using digital watermarking or alternative technologies. As is typical in a new and evolving industry, demand and market acceptance of recently introduced products and services are subject to a high level of uncertainty. Our products and services relating to digital watermarking are currently used by only a limited number of customers. It is difficult to predict the future growth rate, if any, and ultimate size of these markets or our anticipated future markets. We cannot assure you that new markets for our products and services will develop or that our existing markets will grow.

*We may not be able to adequately protect our intellectual property, and we may be subject to infringement claims*

Our success depends in part on licensing our proprietary technologies. We rely on a combination of patent, copyright, trademark and trade secret rights, confidentiality procedures and licensing arrangements to establish and protect our proprietary rights. We face risks associated with our patent position, including the potential need to engage in significant legal proceedings to enforce our patents, the possibility that the validity or enforceability of our patents may be denied, the possibility that third parties will be able to compete against us without infringing our patents and the possibility that our products may infringe patent rights of third parties. Budgetary concerns may cause us not to file, or continue, litigation against known infringers of our patent rights. Failure to reliably enforce our patent rights against infringers may make licensing more difficult. If we fail to protect our intellectual property rights and proprietary technologies adequately, if there are changes in applicable laws that are adverse to our interests, or if we become involved in litigation relating to our intellectual property rights and proprietary technologies or relating to the intellectual property rights of others, our business could be seriously harmed.

As part of our confidentiality procedures, we generally enter into non-disclosure agreements with our employees, directors, consultants and corporate partners, and attempt to control access to and distribution of our technologies, solutions, documentation and other proprietary information. Despite these procedures, third parties could copy or otherwise obtain and make unauthorized use of our technologies, solutions or other proprietary information or independently develop similar technologies, solutions or information. The steps that we have taken to prevent misappropriation of our solutions, technologies or other proprietary information may not prevent their misappropriation, particularly in non-U.S. countries where laws or law enforcement practices may not protect our proprietary rights as fully as in the United States.

Effective protection of intellectual property rights may be unavailable or limited, both in the United States and in non-U.S. countries. Patent protection throughout the world is generally established on a country-by-country basis. We have applied for patent protection both inside the United States and in various countries outside the United States. However, we cannot assure you that pending patents will be issued or that issued patents will be valid or enforceable. We cannot assure you that the protection of our proprietary rights will be adequate or that our competitors will not independently develop similar technologies, duplicate our services or design around any of our patents or other intellectual property rights we hold.

Some of our contracts include provisions assuring non-infringement of third party intellectual property rights. If an infringement arose in a context governed by such a contract, our exposure could be large and our business could be materially harmed.

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We are the exclusive licensee under some third party patents, and may need the assistance of these parties if we choose to enforce any of these patent rights. The cooperation of these third parties cannot be assured. Although we do not currently rely on these technologies for our core products, we may in the future.

We have registered "DIGIMARC", "MARCSPIDER", "MARCCENTRE", "MEDIABRIDGE", "PICTUREMARC" and the "D" logo as trademarks in the United States and some other countries, and are pursuing registration of the "DIGIMARC" trademark in additional countries. However, our tradenames or trademarks may be registered by third parties in other countries, impairing our ability to enter and compete in these markets. In the United States, the trademark "Digimark" and the domain names "Digimark.com" and "Mediabridge.com" have been registered by unrelated companies. While we have put in place formal arrangements for co-existence with one of these unrelated companies, and while we have co-existed successfully to date with the others, if we were forced to change our name or were prevented from using our other brand names, we would lose a significant amount of our brand equity, and our business would suffer.

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As more companies engage in business activities relating to digital watermarking and develop intellectual property rights, it is increasingly likely that claims may arise which assert that some of our products or services infringe upon other parties' intellectual property rights. These claims could subject us to costly litigation, divert management resources and result in the invalidation of our intellectual property rights. These claims may require us to pay significant damages, cease production of infringing products, terminate our use of infringing technologies or develop non-infringing technologies. In these circumstances, continued use of our technologies may require that we acquire licenses to the intellectual property that is the subject of the alleged infringement, and we might not be able to obtain these licenses on commercially reasonable terms or at all. Our use of protected technologies may result in liability that threatens our continuing operation. In addition, we offer indemnification against intellectual property infringement for some contracts to which we are a party. If a claim were made under such an indemnity provision, we could incur significant expense.

*The security systems that we use in our proprietary technologies and in our business may be circumvented by third parties, which could damage our reputation and disrupt our business*

Many of our products and services involve the embedding of digital code in media content that is imperceptible in normal use but that can be read by digital devices. The success of these products and services depends on the security of our media commerce, anti-counterfeiting and piracy systems, self-authentication solutions, and supporting infrastructure. Security breaches of these systems and solutions could damage our reputation and expose us to a risk of loss or litigation and possible liability. The security measures that we use may not prevent security breaches, and failure to prevent these security breaches may disrupt our business. A party who is able to circumvent our security measures could misappropriate proprietary information or cause interruptions or otherwise damage our products, services and reputation and the properties of our customers. If unintended parties obtain sensitive data and information, or create bugs or viruses in an attempt to sabotage the functionality of our products and services, we may receive negative publicity, incur liability to our customers or lose the confidence of our customers, any of which may cause the termination or modification of our contracts.

We may be required to expend significant capital and other resources to protect ourselves against the threat of security breaches or to alleviate problems caused by these breaches. However, protection may not be available at a reasonable price or at all.

*Our products could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes*

Products and systems as complex as those we offer or develop frequently contain undetected defects or errors. Despite testing, defects or errors may occur in existing or new products, which could result in loss of revenue or market share, failure to achieve market acceptance, diversion of development resources, injury to our reputation, increased insurance costs and increased service and warranty costs, any of which could materially harm our business. Furthermore, we often provide implementation, customization, consulting and other technical services in connection with the implementation and ongoing maintenance of our products. The performance of these products typically involves working with sophisticated software, computing and communications systems. Our inability to meet customer expectations or project milestones in a timely manner could also result in a loss of, or delay in, revenue, loss of market share, failure to achieve market acceptance, injury to our reputation and increased costs.

Because many customers rely on our products for critical security applications, defects or errors in our products or services might discourage customers from purchasing future products and services. These defects or errors could also result in product liability or warranty claims. Although we attempt to reduce the risk of losses resulting from these claims through warranty disclaimers and liability limitation clauses in our sales agreements, these contractual provisions are sometimes not included and may not

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be enforceable in every instance. Furthermore, although we maintain errors and omissions insurance, this insurance coverage may not adequately cover these claims. If a court refused to enforce the liability-limiting provisions of our contracts for any reason, or if liabilities arose that were not contractually limited or adequately covered by insurance, our business could be materially harmed.

During 2002, DIDS engaged in activities in a number of jurisdictions to finish projects begun prior to our acquisition of LGP or correct legacy defects from installations prior to the LGP acquisition that were identified during or since the acquisition process as needing remedial action. We have made considerable progress with regard to these activities. Nonetheless, there may be additional issues or defects that we have not yet identified that may require significant efforts and resources to correct and that would cause us to divert resources away from other purposes.

*We may encounter difficulties managing our planned growth and expansion that may harm our business*

As of December 31, 2002 we had 402 employees and 51 contract workers. During the year, we made a number of modifications to the workforce, including termination and reassignment of a significant number of employees. To effectively manage our operations, management must continue to improve our operational and financial systems and train, improve and manage our employee base. Less than optimal rates of growth of our product lines and areas of business may require further restructuring from time to time which, in turn, could significantly strain our managerial and financial resources. If we cannot manage our growth effectively, we may not be able to coordinate the activities of our technical, legal, accounting and marketing staffs, and our business could be harmed.

*If there is a sustained downturn in purchases or adoption of new technologies, our business may be harmed*

Our growth plans assume, in part, that new technologies will gain widespread market acceptance and be purchased by a growing number of customers. If there is a sustained downturn in purchases or adoption of new technologies, we may be unable to realize anticipated future revenue and our business could be materially harmed.

*We may acquire other businesses or technologies and, if we do, we may be unable to integrate them with our own business, or we may impair our financial performance as a result of doing so*

From time to time we have discussions with third parties about potential acquisitions. If appropriate opportunities present themselves, we may attempt to acquire other businesses or technologies. We may not be able to identify, negotiate or finance any future acquisition successfully. Other than the acquisition of DIDS, we have limited experience in integrating an acquired business into our existing business. The process of integration may produce operating difficulties and expenditures and may require significant attention of our management that otherwise would be available for the ongoing development of our business. In the end, we may be unsuccessful in integrating an acquired business or technology with our existing business. Moreover, if we make acquisitions, we may issue shares of our stock that would dilute the equity holdings of our existing stockholders, incur debt, assume contingent liabilities or create additional expenses related to amortizing intangible and other assets, any of which might negatively affect our financial results and cause our stock price to decline. Our due diligence of acquired companies may fail to reveal material risks or liabilities. Any financing that we might need for future acquisitions may also place restrictions on our business. Furthermore, we may never achieve any of the benefits that we might anticipate from a future acquisition.

*We depend on key employees for our future success*

Our success depends to a significant extent on the performance and continued service of our senior management. Most of our senior management do not have an employment agreement. Although

our employees generally have executed agreements containing non-competition clauses, there is no assurance that a court would enforce all of the terms of these clauses or the clauses generally. If these clauses were not fully enforced, our employees would be freely able to join our competitors. In addition, we currently have key person life insurance only on Bruce Davis, our chairman and chief executive officer, and Geoffrey Rhoads, our chief technology officer and one of our directors. The loss of the services of any of our senior management or any of our other key employees could harm our business.

*If we are not able to retain, hire or integrate qualified personnel, our business may be harmed*

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Our ability to successfully develop, market, sell and license our products, services, and intellectual property depends to a significant degree upon the continued contributions of our key personnel in engineering, sales, marketing and operations, many of whom would be difficult to replace. We believe our future success will also depend in large part upon our ability to retain our current key employees or our ability to attract, integrate and retain other highly skilled managerial, engineering, sales, marketing, and operations personnel in the future. Our business is based on patented technology, which is unique and not generally known. New employees require substantial training, involving significant resources and management attention. Competition for experienced personnel in our market segments can be intense. If we do not succeed in attracting new, qualified personnel or in integrating, retaining and motivating our current personnel, our business could be harmed.

*Our promotion of the Digimarc brand must be successful in order for us to attract users and other strategic partners*

We believe that establishing and maintaining our brand is important to our success and that the importance of brand recognition will increase due to the growing number of technologies that compete with our watermarking technologies and the increasing number of competitors offering technologies similar to ours. If our brand-building strategy is unsuccessful, the effort and expenses spent may never be recovered, we may be unable to increase our future revenue and our business could be seriously harmed.

*Anti-takeover provisions in our charter documents could prevent or delay transactions from occurring that could be profitable for our stockholders*

The anti-takeover provisions of Delaware law and our certificate of incorporation and bylaws may make a change of control of us more difficult, even if a change of control would be beneficial to our stockholders. These provisions may allow our board of directors to prevent changes in management and control of us. Under Delaware law, our board may adopt additional anti-takeover measures in the future.

We have the following anti-takeover provisions in our charter documents:

Our board of directors is divided into three classes of directors, with a separate class of directors being elected at each successive annual meeting for a term of three years;

Special meetings of the stockholders may be called only by our chief executive officer, our secretary or at the discretion of our board of directors;

Vacancies on our board of directors may be filled by a majority of directors in office, and not by the stockholders; and

Our board of directors may issue preferred stock and determine the price, rights, preferences and privileges of those shares without any vote or further action by the stockholders.

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These provisions could have the effect of discouraging a third party from making a tender offer or otherwise attempting to gain control of us. In addition, these provisions could limit the price that investors might be willing to pay in the future for shares of our common stock.

### **Risks Related to Our Markets**

*If we are unable to respond to regulatory or industry standards effectively, our business could be harmed*

Our future success will depend in part on our ability to enhance and improve the responsiveness, functionality and features of our products and services in accordance with regulatory or industry standards. Our ability to remain competitive will depend in part on our ability to influence and respond to emerging industry and statutory standards, including any standards that may be adopted for the protection of audio, video, and image content, and for other uses of metadata with such content, in a timely and cost-effective manner. If we are unable to influence or respond to these standards effectively, our business could be harmed.

*If we are unable to integrate new technologies effectively, our business could be harmed*

Our target markets are characterized by new and evolving technologies. The success of our business will depend on our ability to address the increasingly sophisticated technological needs of our customers in a timely and cost-effective manner. Our ability to remain competitive will

depend in part on our ability to:

Enhance and improve the responsiveness, functionality and other features of the products and services we offer or plan to offer;

Continue to develop our technical expertise; and

Develop and introduce new services, applications and technologies to meet changing customer needs and preferences and to integrate new technologies.

We cannot assure you that we will be successful in responding to these technological and industry challenges in a timely and cost-effective manner. If we are unable to integrate new technologies effectively or respond to these changing needs, our business could be harmed.

*If leading companies in our industry or standard setting bodies or institutions downplay, minimize, or reject the use of watermarking, our business could be harmed*

Many of our business endeavors, from our work for the consortium of banks to our licensing of intellectual property in support of audio and video applications, can be impeded or frustrated by larger, more influential companies or by standard setting bodies or institutions downplaying, minimizing or rejecting the value or use of watermarking technology or any of our other technologies. Such a negative position by these companies, bodies or institutions, if taken, may result in obstacles for us that we would be incapable of overcoming and may make achieving our business objectives difficult or impossible, harming our business as a result.

*Our markets for digital watermarking applications are highly competitive*

The markets for digital watermarking applications are intensely competitive and rapidly evolving. We expect competition to continue from both existing competitors and new market entrants. We face competition from other companies using digital watermarking technologies and from alternative technologies. As we expand the applications for our digital watermarking technologies, we will experience more competition from products and services that are substitutes for our digital watermarking applications. Because our business models are new and emerging, we may face

competition from unexpected sources. Alternative technologies that may directly or indirectly compete with particular applications of our watermarking technologies include:

Encryption securing data during distribution using a secret code so it cannot be accessed except by authorized users;

Containers inserting a media object in a wrapper, which prevents the media object from being duplicated;

Dataglyphs a slight visible modification of the characteristics of an image or document that is machine-readable;

Scrambled Indicia optical refraction-based data-hiding technique that is inserted into an image and can be read with a lens;

Traditional anti-counterfeiting technologies a number of solutions used currently by many governments that compete for budgetary outlays designed to deter counterfeiting, including optically sensitive ink, magnetic threads and other materials used in the printing of currencies;



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Radio frequency tags embedding a chip that emits a signal when in close proximity with a receiver, which is being used in photo identification, labels and tags;

Internet technologies numerous existing and potential Internet access and search methods will be potentially competitive with the Digimarc MediaBridge system;

Digital fingerprints and signatures a metric, or metrics, computed solely from a source image or audio or video track, that can be used to uniquely identify an image or track, or authenticate the image or track;

Smart cards badges and cards including a semiconductor memory and/or processor used for authentication and related purposes; and

Bar codes data-carrying code, typically visible in nature (but invisible if printed in ultraviolet- or infrared-responsive inks).

In addition, as we more broadly apply our technologies to the Internet through new commercial solutions applications, we may begin to compete with a wide range of other types of companies beyond those companies using digital watermarking technologies and alternative technologies. Moreover, many of the companies that currently compete with us, as well as other companies with whom we may compete in the future, are national or international in scope and may have greater technical, financial, marketing, and political resources than we do. These resources could enable these companies to initiate severe price cuts or take other measures in an effort to gain market share or otherwise impede our progress in target markets. We cannot assure you that digital watermarking technologies, and our products and services using these technologies, will gain widespread market acceptance.

New developments are expected to continue, and we cannot assure you that discoveries by others, including current and potential competitors, will not render our services and products noncompetitive. Moreover, because of rapid technological changes, we may be required to expend greater amounts of time and money than currently anticipated to develop new products and services, which in turn may necessitate us to require greater revenue streams on such products and services to cover developmental costs. We cannot assure you that we will be able to compete successfully against current or future participants in our markets or against alternative technologies, nor can we assure you that the competitive pressures we face will not harm our business, operating results and financial condition.

### ITEM 7: MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements relating to future events or the future financial performance of Digimarc, which involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including those set forth under "Risks Related to Our Business" and "Risks Related to Our Markets" under Item 1 above and elsewhere in the Annual Report on Form 10-K. We assume no obligation to update this information. This discussion and analysis should be read in conjunction with our consolidated financial statements and related notes included elsewhere herein.*

#### Overview

We believe we are one of the leading providers of patented digital watermarking technologies that allow imperceptible digital codes to be embedded in all forms of media content, including photographs, movies, music, banknotes and other financial instruments, personal identification documents, and product packages. The embedded codes within various types of media content can be detected and read by software or hardware detectors in personal computers and other digital processing devices. Directly and through our licensees, we believe we have the broadest intellectual property patent portfolio and commercial deployment of watermarking-based applications amongst entities of which we are aware, including use of such intellectual property by an international consortium of leading central banks and more than five thousand enterprises and individuals who use our products to identify and manage their image collections.

We also believe we are one of the leading suppliers of secure personal identification systems, providing more than 60 million personal identification documents and driver licenses per year. We supply the issuance systems for the majority of driver licenses produced in the United States and provide all or part of the issuance systems for national identifications, voter identifications, and driver licenses in more than twenty non-U.S. countries. We understand that our next-closest competitor with regard to secure personal identification systems held contracts with no

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more than an estimated 15 driver license issuing authorities in the United States as of December 31, 2002. We are developing and marketing enhanced security for personal identification documents enabled by our proprietary digital watermarking technology.

The majority of our revenues come from multi-year contracts with government agencies, including U.S. state departments of motor vehicles and central banks. We intend to increase our revenue through increasing adoption of our products and services, marketing new digital watermarking applications, and licensing our intellectual property. We expect to target, among other sources of revenue, government agencies, commercial printers, packaging companies, publishers, advertisers, proprietors of large image collections, and other producers of printed materials. Our aim is to license our technologies to those content producers so that they may embed our digital watermarks in their printed media, such as identification documents, magazine advertisements and articles, direct mail coupons, catalogs, stationery and envelopes, product packaging, labels and tags, trading cards, credit cards, and business cards. Our current and anticipated products are intended to enable content producers to control reproduction and alteration of their content, as well as to enable their printed materials to provide a link to relevant network services. Revenue from our new applications may include one-time license fees, time-based or volume-based fees, subscription fees, royalties and revenue-sharing arrangements. We anticipate that the calculation of fees and royalties will be based at least in part on the size of the installed base of personal computers, cameras, scanners, digital image capture and output devices, and software carrying our patented reader technology, as well as the nature of the use of, and the nature and amount of licensed content carrying, our digital watermarks.

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Since inception, we have invested a significant portion of our resources and capital in attracting top senior management, in developing our products and technology, and in building our sales and marketing organizations. We have a limited operating history upon which investors may evaluate our business and prospects. We have incurred significant losses to date, and as of December 31, 2002, we had an accumulated deficit of approximately \$56.1 million. We intend to continue to expend significant financial and management resources on developing additional products and services, improving sales and marketing activities, advancing our technologies and expanding our operations. Our revenue may not increase or even continue at its current levels and we may not achieve or maintain profitability or generate cash from operations in future periods. Our prospects must be considered in light of the risks, expenses and difficulties frequently encountered by companies in their early stages of development, particularly companies deploying new technologies and applications.

### Critical Accounting Policies and Estimates

The preparation of consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to bad debts, inventories, intangible assets, income taxes, restructuring, long-term service contracts, warranties, investments, and contingencies and litigation. We base our estimates on historical experience and on various other assumptions we believe to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

Certain of our accounting policies require higher degrees of judgment than others in their application. These include revenue recognition on long-term service contracts, impairments and estimation of useful lives of long-lived assets, inventory valuation, and reserves for uncollectible accounts receivable. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements:

**Revenue recognition on long-term service contracts:** We recognize revenue and profit as work progresses on long-term, fixed price service contracts (other than our long-term identification and drivers' license production contracts) using the percentage-of-completion method, which relies on estimates of total expected contract revenue and costs. We follow the percentage-of-completion method since reasonably dependable estimates of the revenue and costs applicable to various stages of a contract can be made. Revenue is recognized based on the percentage of completion of the contract using budgeted amounts established with the customer at the inception of the contract. Progress towards completion is measured using allowable costs incurred as compared to the budgeted amounts contained in the contract. Recognized revenue and profit are subject to revisions as the contract progresses to completion. Revisions in profit estimates are charged to income in the period in which the facts that give rise to the revision become known. Any estimation process, including that used in preparing contract accounting models, involves inherent risk. We reduce the inherent risk relating to revenue and cost estimates in percentage-of-completion models through our contract approval and budget monitoring processes. Our estimates of revenue and costs on customer contracts change periodically in the normal course of business, occasionally due to modifications of our contractual arrangements.

We recognize revenue on long-term identification and drivers' license production contracts using a price-per-card method. We use actual monthly volume amounts, if available, or we estimate the card production volume on a monthly basis for certain of these contracts in order to recognize revenue earned during the period. In the case of estimates, when the actual production information becomes available, which is typically within four weeks, we bill the customer accordingly and any differences from the estimates are recognized in the month the billing occurs. These amounts represent our best estimates of cards produced and are based on historical

trends, known events during the month, and discussions with contract representatives. The price-per-card

is known; therefore, these estimates represent the best available information regarding revenue earned during that specific month. The estimated amounts are recorded as unbilled receivables on the balance sheet until the actual production information is available and the billing occurs. Any estimation process involves inherent risk. We reduce the inherent risk relating to production estimation through our approval and monitoring processes related to accounting estimates.

**Impairments and estimation of useful lives of long-lived assets:** We periodically review long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. We account for long-lived assets in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*. This statement supersedes SFAS No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of*, and the accounting and reporting provisions of Accounting Principles Board No. 30, *Reporting the results of Operations Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions*, and requires that long-lived assets and certain identifiable intangibles be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future net undiscounted cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Fair value is determined based on discounted cash flows or appraised values, depending on the nature of the asset.

**Inventory valuation:** Inventory consists of consumable supplies that are used in the production of driver licenses and products held for resale to customers. We value inventory at the lower of cost or market value (which lower amount is the net realizable value). We reduce the value of our inventory for estimated obsolescence or unmarketable inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future demand and market conditions. If actual market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

**Reserve for uncollectible accounts receivable:** We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required.

## Results of Operations

The following table presents our consolidated statement of operations data for the periods indicated as a percentage of total revenue.

	Years Ended December 31,		
	2002	2001	2000
Revenue:			
Product and subscription	22%	12%	11%
Service	78	88	89
Total revenue	100	100	100
Cost of revenue:			
Product and subscription	14	1	1
Service	46	47	55

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	Years Ended December 31,		
	2002	2001	2000
Total cost of revenue	60	48	56
Gross profit	40	52	44
Operating expenses:			
Sales and marketing	16	76	92
Research, development and engineering	10	46	36
General and administrative	24	92	99
Restructuring charges, net	1	4	
Total operating expenses	51	218	227
Operating loss	(11)	(166)	(183)
Other income (expense), net	1	37	49
Net loss	(10)%	(129)%	(134)%

**Years Ended December 31, 2002 and 2001**

*Revenue*

Total revenue was \$86.6 million and \$14.9 million for the years ended December 31, 2002 and 2001, respectively. The \$71.7 million or 482% increase in total revenue resulted from the inclusion of a full year of activity for the acquired personal identification systems business (the LGP acquisition), which increased revenue by \$74.3 million. Revenue from identified international customers was \$17.8 million and \$2.5 million for 2002 and 2001, respectively. The consortium of central banks accounted for less than 10% and approximately 56% of our total revenue for the years ended December 31, 2002 and 2001, respectively. Revenue from the consortium of central banks is expected to remain lower than historical levels as a percent of total revenue in the future due to the acquisition of LGP.

*Product and subscription.* Product and subscription revenue was \$19.5 million and \$1.8 million for the years ended December 31, 2002 and 2001, respectively. The \$17.6 million or 964% increase was primarily related to a full year of activity for the acquired personal identification systems business and its personal identification systems product sales of \$17.1 million. A portion of our revenue each year is generated from the licensing of technology. In the competitive environment in which we operate, product generation, development and marketing processes relating to technology are uncertain and complex, requiring accurate prediction of demand as well as successful management of various development risks inherent in technology development. In light of these dependencies, it is possible that failure to successfully manage future changes in technology with respect to our technology could have a long-term impact on our revenue.

*Service.* Service revenue was \$67.1 million and \$13.0 million for the years ended December 31, 2002 and 2001, respectively. The \$54.1 million or 415% increase was primarily the result of the inclusion of a full year of activity for the acquired personal identification systems business, which resulted in an increase of \$57.2 million in service revenue, partially offset by a decrease in contract-based service revenues of \$3.1 million.

*Cost of Revenue*

*Product and subscription.* Cost of product and subscription revenue primarily includes compensation for operations personnel, costs of consumables sold to third parties, costs of machinery sold to third parties, Internet service provider connectivity charges and image search data fees to support the services offered to our subscription customers. Cost of product and subscription revenue was \$12.4 million and \$0.2 million for the years ended December 31, 2002 and 2001, respectively. The \$12.2 million increase was a result of the product sales generated by the inclusion of a full year of activity for the acquired personal identification business.

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*Service.* Cost of service revenue primarily includes compensation for software developers, quality assurance personnel, product managers, field operations personnel, and business development personnel, outside contractors, costs of consumables used in delivering a service, depreciation charges for machinery used specifically for service delivery, and travel costs directly attributable to service and development contracts. Cost of service revenue was \$39.6 million and \$7.0 million for the years ended December 31, 2002 and 2001, respectively. The \$32.6 million or 465% increase was primarily the result of the inclusion of a full year of activity for the acquired personal identification systems business, partially offset by decreased cost of service related to contract-based services of \$1.4 million. Field operations employees totaled 146 and 92 at December 31, 2002 and 2001, respectively. All of the field operations employees at December 31, 2001 were the result of hiring personnel formerly employed by LGP.

### *Operating Expenses*

Operating expenses in total increased by \$12.0 million or 37% for the year ended December 31, 2002 compared to the year ended December 31, 2001 due to the inclusion of LGP for a full year. The acquisition of LGP was completed on December 21, 2001, so we reported only 10 days of results for the combined entity for the year ended December 31, 2001 compared to a full year of activity in the year ended December 31, 2002. The absolute dollar and percentage increase in operating expenses are relatively small when compared to the absolute dollar and percentage increase in revenue and cost of revenue. The acquired LGP business had a cost structure in which operating expenses were lower as a percentage of revenue than our historical business. The increase in overall operating expenses was offset by cost control measures taken by us during the year, such as restructuring the business, consolidating operations, negotiating volume pricing with vendors, centralizing certain services, and standardizing products.

*Sales and marketing.* Sales and marketing expenses consist primarily of compensation, benefits and related costs of sales and marketing personnel, product managers and sales engineers, as well as recruiting, travel, market research, and costs associated with marketing programs, such as trade shows, public relations and new product launches. Sales and marketing expenses were \$14.2 million and \$11.3 million for the years ended December 31, 2002 and 2001, respectively. The overall increase in sales and marketing expenses of \$2.9 million or 26% resulted from the inclusion of LGP for a full year. The net increase in spending was mitigated by cost control measures taken by us during the year, such as restructuring the business, consolidating operations, negotiating volume pricing with vendors, centralizing certain services, and standardizing products. The increase resulted from increased salaries and other employee related costs of approximately \$2.1 million, increased administrative costs of approximately \$0.2 million related to sales and marketing activities, increased use of outside consulting

services of \$0.1 million, and an increase of approximately \$1.6 million in sales and marketing costs due to the decreased use of sales and marketing personnel to provide services for our revenue generating contracts that would have been included in cost of service revenue. These increases were offset by a decrease of approximately \$1.1 million related to decreased promotional costs. Sales and marketing employees totaled 59 and 81 as of December 31, 2002 and 2001, respectively. Of the total employees in sales and marketing at December 31, 2001, 22 were the result of hiring personnel formerly employed by LGP. We anticipate that we will continue to invest significantly in sales and marketing for the foreseeable future.

*Research, development and engineering.* Research, development and engineering expenses consist primarily of compensation, benefits and related costs of software deve