

a2wireless.com

Executive Summary

Making Wireless Devices A Corporate Asset

This executive summary does not constitute an offer to sell securities.

a2wireless.com

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Concept

Making Small Devices A Corporate Asset

Mobile computing is rapidly becoming the foundation of e-business, letting users work at any place and time. For example, insurance associates use mobile devices to build links to customers, order products, and deliver the right information at the right time, and maintenance workers need hands-free computing for connecting to databases and report logs.

As mobile computing evolves, the key business advantage lies in inventing wireless solutions that work. Delivering content is the key.

Small wireless devices such as pocket PCs (Windows® CE), PalmPilots, digital phones and pagers offer significant profit potential. A2wireless.com creates solutions that provide companies with a needed edge in this almost 'perfect' competitive environment.

The 3 million Americans who today work the Net without a wire are projected to grow to 50 million by 2004.

Research Highlights from a recent report by Cahners In-Stat Group:

Demand is Loud For Wireless Internet

The ballyhoo over wireless Internet access is not just hype....The strongest user demand for wireless Internet services comes from three categories: e-mail messaging, World Wide Web browsing, and pull content (also known as Web clipping). Of the three, e-mail messaging is the killer app. Workers rely on e-mail and want access...

Business Drivers

The revolution is being led by medium and large wireless opportunities.

The end of the 20th century marks the beginning of a wireless revolution so powerful that not one but several new markets are being defined before our eyes. Corporations, driven by fear of *perfect competition*—where neither buyers nor sellers can affect prices—are looking to wireless technology as a strategic weapon that gives them competitive advantage.

Today, several trends are helping to fuel the demand for untethered Internet access:

- The Internet has become essential to business people. According to Cahners In-Stat Group, Internet penetration in the United States is expected to grow from 27.4 percent of the population in 1998 to 46 percent in 1999.
- Increased mobility among both consumers and business people. Both personal and business schedules are filled with appointments, meetings and errands requiring movement from place to place.
- Information addiction. Business professionals need access to mission critical information to survive in today's highly competitive marketplace. Workers require access to corporate LANs, intranets and e-mail whether in an office, at home, in a hotel room, at a customer site or on the road.
- Portable computing. Absence from the office is no longer an excuse for being non-productive. Vendors are developing new portable computing devices at breakneck speed.

The year 2000 has arrived, and with it comes a renewed focus on corporate planning for the new year. It also brings fresh possibilities in the ever-changing, rapidly advancing, converging world of telecommunications and computing. These once-separate industries are moving closer together, pushing CIOs, IT managers and employees to make new decisions about existing and future services.

Benefits

Many companies are willing to subsidize the cost of a digital phone and service. By giving employees mobile access to company information via their phones, corporations give them a competitive technical edge.

The cost of providing mobile access to corporate information is decreasing, and systems are getting easier to implement and support, because large companies are joining with wireless operators to provide services.

By accessing real-time data, mobile computing frees employees and customers to work remotely. Benefits include increased worker productivity and greater customer access.

Intelligent agent technology makes it easier for mobile users to find information and complete tasks, reducing the amount of needed information on the screen.

There are obvious advantages to using smart phones, pagers and the Palm VIs. They're lightweight and portable, while laptop computers are still quite large and heavy, consume large amounts of energy, and can be complex to maintain and use.

For real-time information and transactions, many small computing devices have wireless built in, so they're ready to go out of the box. They're also more of an electronic device than a computer. Limited form, features, and performance keep them simple and easy to use. For access to e-mail, information and limited exchange transactions, small wireless devices work well.

Growth

In the past 15 years, the number of wireless subscribers in the United States has grown to more than 90 million people from less than 100,000, according to a new report from Cahners In-Stat Group of Newton, Mass. The research and consulting firm predicts that wireless penetration will nearly double over the next 5 years. By the end of 2000, Cahners expects there to be more than 103 million wireless subscribers in the United States. In 2004, Cahners predicts there will be 188 million subscribers.

By 2002, medium and large firms will spend over \$117 billion on wireless equipment and services, more than double the \$54 billion spent in 1998.

CTIA's Semi-annual Wireless Survey states:

By the time you finish reading this sentence, two new subscribers will have joined the wireless customer base. The fastest growing sector of telecommunications, wireless, brings service to a new customer every 2.25 seconds. In 1998, 13.89 million new subscribers activated wireless phones, bringing the year-end total to 69.2 million.

In five years, GartnerGroup expects more than one billion mobile phones will be deployed worldwide. International Data Corporation predicts that nearly 56-million information appliances will offered.

Although prices are dropping for wireless equipment and services, the market is expected to broaden in size and scope. The significant growth factors will be:

- More firms will adopt wireless technology;
- Corporate telecommunication budgets will grow as markets broaden;
- The wireless component of telecommunication budgets will grow as corporations seek strategic advantage over competitors;
- The total number of mobile workers will increase.

Exit Strategy

Within the next six to twelve months, many traditional Web site development (e-commerce/e-business consultants) companies will be forced to find new ways to grow their business.

The willingness of a company to create a Web presence without a ROI is rapidly disappearing.

Very soon, creating a Web presence simply because it is fashionable will fade. Companies will no longer invest millions of dollars in technology unless they can be assured of the return on their money.

After horror stories, such as Levi Straus withdrawing from e-commerce after five years and wasting \$8 million, people are more cautious than ever about spending money on e-business. Companies like eToys and CD Now are learning the hard way about running a successful business. Their stock prices have tumbled, and it is uncertain whether they will survive.

The money companies have spent on oversold ERP systems over the past decade is overwhelming. Moreover, many of these companies that invested in ERP are now forced to integrate it with the Web, creating yet another unwelcome investment.

Because of the easy entry into traditional Web design, the number of competitors has grown exponentially. Every week several new companies enter the market.

Recently, I interviewed ten e-business related companies in the Detroit area, and none of them mentioned wireless technologies as a big money maker. They all believe traditional e-commerce Web site development will be enough to keep their businesses growing for the next few years. Several companies I met with have as many as fifty employees, but no customers here! The office supports their other regions. I believe most of these companies will soon go through a major reorganization. Other new comers I met expect to find and hire forty new employees by year's end and anticipate customers will just magically appear.

All these companies have one thing in common; they are investing huge sums of money into a volatile market space. Most of them will pull out or fail within a year or two.

It is my goal to build a2wireless.com into a team of fifty to one hundred wireless experts. We will have the reputation of providing wireless solutions to solve real-business problems. Within a year, many of these companies mentioned above will be desperately looking for new markets, and a2wireless.com will be primed and ready to be acquired.

Additional acquisition opportunities include portals Yahoo, Lycos and others needing to scale up WAP deployment.

Alternatively, a2wireless.com will held long enough to IPO.

Just when all the easy money has been milked from the Internet, WAP herds in an entirely new kind of cash cow. A2wireless.com will be charged and ready when the time comes.

Team

David A. Berger, Founder (Please see appendix 1 for more information.)

David, founder of a2.com, is a best-selling author and an expert on e-business with more than a decade of experience integrating direct marketing with technology. His degree is in Interdisciplinary Technology.

As a Hybrid Direct Marketing Strategist for IBM, he developed marketing campaigns for its most prestigious customer base of Fortune 100 companies. IBM's total sales from direct marketing are reportedly over \$20 billion. Refining techniques used by IBM, HP, Dell, and Microsoft, he developed his own hybrid direct marketing strategies to generate speedy results for his clients.

Applying his techniques at Buhler Limited of Switzerland, Berger generated record sales of more than five million dollars. He was a pioneer, selling new technology to companies such as General Motors and numerous first-tier suppliers. Many of his sales were firsts for North America. By using his proven sales and marketing techniques, he was able to cut sales cycles and expenses in half.

He has consulted for technology leaders such as Cisco Systems, 3Com, SGI, AppNet/Sigma6, Bowne Internet Solutions, ABB and many others. He enjoys traveling and consulting for resorts such as Grand Traverse Resort, Boyne USA and Holiday Inn.

John T., Head of Technology

John is responsible for technology direction, solution planning and project management. He has technological experience to protect and empower corporate information assets, creating dynamic solutions unique to each business case.

John has worked with companies such as General Motors, Delphi Automotive, Wayne State University, Boyne USA Resorts, Norwest and Reynolds & Reynolds. He's a certified firewall security engineer and has designed secure e-commerce transaction systems for the Michigan Bureau of State Lottery, Michigan's Secretary of State, Buick Motors and Harmony House. As a Webmaster, he has lead many dynamic, high-traffic

Web sites from conception to implementation, including Delphi Automotive (delphiauto.com) and Harmony House (harmonyhouse.com).

Simon T., Head of Internet Security

Simon is our Internet security expert. He has several years of experience with Verisign, the premier Internet security company with a market cap of over \$5 billion. His presence assures the team will offer the best security and encryption solutions possible.

Dr. G. B. Cross, Head Writer

Born in England, G. B. has more than thirty-five years' experience teaching creative and technical writing as well as advanced literature courses. He holds the prestigious Barnard Hewitt Award for "outstanding contribution to theatre history" and has published seven adult and children's novels.

As director of the Adelphi Theatre Calendar Project, he pioneered the use of computer technology by constructing the Web's most comprehensive theatrical database. He specializes in writing and editing promotional material and white papers used on the web and in print.

Susana P., Head of Graphic Design

Susana brings fifteen years of international experience in design and advertising to the team. She has a bachelor's degree in graphic design and a master's degree in poster design and book illustration.

She worked for five years as art director at the Design Group of Madison, Wisconsin, and for four more years in the same position at the Laurer Markin Group. She has won numerous prizes and honors, including four "Addy" awards for excellence in advertising. Susana provides the team with both outstanding design skills and a unique sensitivity towards the complexities of the global marketplace. Her clients include international firms such as Pilkington Glass, ASC Incorporated and Oldcastle.

Mission

To solve business problems using wireless technology, focusing on e-mail, SMS, Database and Web solutions.

Products and Services

Our focus will be to develop creative wireless solutions. We help clients with solving problems in the areas of systems analysis, Palm coding, WML coding, WML Scripting, implementation, database, gateway and server. We will integrate services with other media such as pagers, fax, voice mail, SMS and other related technical equipment.

Current Market

The most used current application is Instant Messaging (IM)—what many dub e-mail of the IM standards. America Online has already released beta versions of its wireless IM client for Windows® CE devices. America Online and Microsoft have both pledged to expand in these areas.

Even small-screen Web phones and handheld PCs can pull up stock quotes, weather reports, and news. ABC, ESPN, USA Today, and the *Wall Street Journal* beam reports from their Web sites to wireless devices. AvantGo.com and @Mobile.com cull news and other clippings from hundreds of Web sites for wireless transmission.

The Weather Channel lets people know how to dress according to local climates. MapQuest.com helps users get around strange cities with street maps and directions. Visa and AirFlash locate the closest ATM. Fodor's steers people to the best local-area restaurants. MovieFone offers show times at nearby theaters. Users also download information from Travelocity and Bloomberg to a wireless device. Even eBay and Amazon.com provide clipping services that let users buy products from the back of a taxi!

And these services are only the beginning. By fall, more than a dozen European and Asian airlines will begin offering Net access aboard their planes. Most analysts are betting wireless banking will prove extremely popular in the coming year. Already, a company called 724 Solutions is working with Bank of America. Citi-Cahners In-Stat Group expects this market to grow dramatically in the next several years.

This demand is largely driven by the mobile users' need to access information. According to a recent survey, users say they will use wireless Internet access primarily for business purposes rather than personal reasons. While 19 percent of respondents are uncertain about who will pay for wireless Internet service, nearly half believe their company will.

Users agree notebook and laptop PCs are by far the preferred devices with which to access the Internet wirelessly, with 89 percent of respondents preferring to use them. Cellular or PCS phones and PalmPilot products were endorsed equally as enablers of

wireless Internet applications, with one-third of respondents stating they wanted to use each of these types of portable products.

It is also important to provide the right type of content in the manner desired. Wireless users prefer to “pull” content off the Web when they want it rather than receive “push” content at pre-set times. Topping the list for pull content is contact information and directions (e.g., locations of restaurants and other points of interest).

Still, many users are interested in having some content pushed at them. Seventy-four percent of users would like to receive personalized news on a preset schedule.

Please see the appendix 2 for a list of application developers and WAP-enabled portals.

Future Markets

Still others believe the ability of wireless devices to identify location—either through built-in GPS modules or from the wireless network itself—will give rise to a world of applications currently only on the drawing board.

For example, many Japanese parents now keep track of their children’s after-school whereabouts via wireless technology. Imagine a pocket PC being able to find a downtown parking place, locate the shortest route to a client, point the late-night pizza delivery person to your high-rise office, or steer you away from horrendous traffic snarls.

Most promising is one-button access to phone directories, city guides, and crucial phone numbers. The wireless device would automatically know which directory to pluck from the Web.

It could hail tow trucks or cabs when the user is hopelessly lost. It could purchase theater tickets, find a hotel room near the financial district, or schedule a massage in towns where the subscriber has never before set foot. Better still, a wireless device could become a form of currency, allowing the purchase of everything from soft drinks to car washes with the click of a button.

Broadband Web Access

Faster Web connections are already trickling to market. More will follow. The telecoms are finding ingenious ways to tack extra capabilities onto existing networks.

In some metropolitan areas, subscribers can already get broadband wireless access to the Web at up to 10Mbps downstream and two levels of service upstream: 32Kbps burstable up to 128Kbps, and 128Kbps burstable up to 512 Kbps. Prices start at \$50

for residential customers and \$100 for businesses. Sprint and MCI World-com offer this service to some 30 million households and businesses in 90 metropolitan markets.

The recently merged Nextlink Communications and Concentric Network are also at work on service. MacFarlan Real Estate Services in Dallas, found the transition “quick, seamless, and painless,” according to COO Keith Waggoner.

These so-called G2.5 solutions will continue to spread. But like cellular communications themselves, reliability and costs vary widely. In the coming year, there is more likely to be a fast wireless connection in hotel rooms than a DSL line. Late last year, Qualcomm introduced a technology to bump existing wireless connections up to a brisk 2.4Mbps—roughly 50 times faster than a standard dial-up modem.

G3 networks may be some years away, but service providers are finding ways to shortcut the Net’s bottlenecks. Late last year, iBeam Broadcasting and SkyStream introduced satellite-based Webcasts, allowing millions of surfers to view the same material simultaneously. As video-on-demand and other rich media continue to use up Internet bandwidth, these solutions cut to the chase.

Fixed wireless technologies (such as LMDS or MMDS)—in which data is transmitted to the PC in your home or office—hold enormous promise. Satellite transmissions, in particular, move data at impressively fast rates. Unfortunately, they’re expensive when compared to a DSL line. And they’re a one-way technology. Outgoing data must still travel through a poky phone line. Neither fixed wireless nor satellite technology will pose much of a threat to DSL or cable modems.

Office Networking

No more connection headaches. No cabling and wiring nightmares. Instant high-speed access to the company network from anywhere in the building. Fixed wireless networks enjoy obvious advantages over mobile devices. They deliver faster throughput and better reliability.

The technology has been kicking around for more than a decade. Yet how many offices routinely use it?

Wireless networks will descend on the business world over the next eighteen months, but only in small ways. In fact, that’s the extraordinary key to the technology: Think small.

Bluetooth, holds the greatest potential for practical and efficient wireless networking. Like the languishing IRDA infrared standard, Bluetooth is a device-to-device standard—except Bluetooth is supported by more than 1,400 manufacturers including Ericsson, Intel, Microsoft, Motorola, and every other big gun.

And the number of supporters is growing. Unlike infrared, Bluetooth works at speeds of up to 1Mbps over longer distances—as far as 10 meters (about 34 feet)—and doesn't require line-of-site connections.

You can zap files from a PC, Laptop, or Web-enabled phone—even a digital camera—to a printer or other device in a nearby office. Even better, a user can dial up your ISP from a cellular phone, then beam the connection to his portable PC or other device. The phone stays in the briefcase but gives a laptop wireless access the Net. Or snap a photo with a digital camera and beam it to a cellular phone, which then sends it across the country. The possibilities are endless. Bluetooth is cheap to implement and devices using it, like those from HP Nokia, and Toshiba, will proliferate in the coming months.

Wireless networks for the home have been booming, thanks to the Share Wireless Access Protocol, which provides data transfer speeds of up to 5Mbps. Many small offices are now using this technology because it's cheap—about \$80 to \$150 per PC. The downside is that it doesn't provide the security firewalls larger enterprises require. And it works best in small spaces; once walls and other physical obstructions are introduced to the wireless signal, reliability becomes iffy.

AT&T Wireless, BellSouth, and Metricom provide wireless network services for businesses. These are also relatively cheap—\$25 to \$55 per PC per month—and easy to set up. Unfortunately, throughput is terrible: 8Kbps to 28.8Kbps. Also, coverage isn't ubiquitous. AT&T's Wireless IP, which works over a CDPD network, covers 120 U.S. metropolitan areas. BellSouth says its Intelligent Wireless Network is available for 93 percent of U.S. business centers. Metricom's Ricochet service is limited to small firms in the San Francisco Bay Area, Seattle, and Washington, D.C.

Larger enterprises can look to the IEEE 802.11f1 wireless standard established late last year. It provides up to 11Mbps throughput and comes with the backing of the Wireless Ethernet compatibility so crucial to big companies. Products that support it (like the Apple AirPort) are trickling to market.

See appendix 3 for further information about these areas described above.

Competition

Please see the appendix 4 for information regarding competitive WAP developers, which shows there is no clear market leader for wireless application development.

Marketing

The type of new business available will be tied closely to the size of the customer companies, the Cahners In-Stat report notes. For example, the fastest growing purchaser of wireless is the middle market, where spending will increase from \$28 billion in 1998 to over \$67 billion in 2002. This increase in spending will occur even as the middle market consolidates because smaller firms grow into large ones and the mid-size firms start to divest unprofitable units.

With fewer customers spending more money, the market will become more efficient for vendors and, at the same time, more competitive.

Proven Hybrid Direct Marketing strategies similar to the ones described in appendix 5 will be used. These approaches are adopted from industry leaders such as IBM, Dell, Microsoft and others.

Sales

In the immediate future, sales will be a function of the executive team. The goal is to identify trade shows to participate in and organizations with which to foster relationships. A list of service providers, upcoming trade shows and organizations is provided in appendix 6.

We will target partners whose problems require our solutions. R&D will be subsidized by the client whenever possible. (The promise of huge savings will make the client more likely to subsidize the development of a new solution.)

In the past, companies who wanted an Internet presence invested in a Web site simply because it was fashionable. Not so with wireless. A definable ROI is our driving force.

Additional background material can be found in appendix 7.