

# LEHMAN BROTHERS

---

September 25, 2000

## Wireless Internet

Wireless Services:

**John M. Bensché, CFA**  
1 212 526-1869  
*jbensché@lehman.com*

**Jennifer A. Cooke, CFA**  
1 212 526-4782  
*jcooke@lehman.com*

**Elisabeth H. Job**  
1 212 526-3765  
*ejob@lehman.com*

Wireless & Internet  
Infrastructure:

**Tim Luke**  
1 212 526-4993  
*tluke@lehman.com*

**Jeff Kvaal**  
1 212 526-2216  
*jkvaal@lehman.com*

**Noelle Swatland**  
1 212 526-3770  
*nswatlan@lehman.com*

European Mobile Services:

**Jo Oliver**  
(44) 20 7260-2237  
*ajoliver@lehman.com*

**Robert Davis**  
(44) 20 7260-1993  
*rodavis@lehman.com*

PC & Internet Software:

**Michael Stanek**  
1 415 274-5336  
*mstanek@lehman.com*

## WIRELESS INTERNET CONFERENCE: UNLOCKING THE VALUE CHAIN

### WIRELESS CONFERENCE HIGHLIGHTS GROWTH TRENDS

- The Wireless Services and Wireless & Internet Infrastructure teams concluded our two-day Wireless Internet Conference on September 20, having learned much about the potential winners in the wireless Internet value chain. The conference strengthened our enthusiasm in the burgeoning space and underscored many of the growth themes identified in our recent industry report.
- We attempted to help the investment community better determine who will receive the projected upside to the wireless Internet. We familiarized ourselves with the value chain, hearing from companies, both public and private, throughout the value chain. The broad consensus is that there is huge potential in the market.
- As expected, we did not come away with hard answers; but we did learn that the companies and investors in attendance credit the carriers as well as the equipment vendors with much of the upside potential.
- Major themes included the importance of core infrastructure upgrades, the extension of enterprise applications to the mobile arena, the growth of location services, enhanced services, and messaging, and the critical role of network security.
- Partnership with the operators, rather than outright competition against the operators, appears to be gaining popularity as a strategy among service providers and middleware and software players. We regard this as positive for the operators and the industry.
- Following the upbeat presentations by many of the industry leaders, we continue to recommend Metricom, Aether and AT&T Wireless on the services side, and Comverse, Phone.com, Ericsson, Sierra Wireless and SignalSoft on the infrastructure side. The conference reaffirmed the tremendous potential for upside we see in these stocks, and we believe they represent a unique play on the wireless data space.

**UNLOCKING THE  
VALUE CHAIN**

Lehman Brothers' Wireless Services and Wireless Infrastructure teams concluded our two-day Wireless Internet Conference yesterday. The conference drew more than 400 attendees and a number of speakers from the wireless Internet services and equipment world. Of the two "tracks" that were concurrently presented throughout the conference (infrastructure and services), we will attempt to describe the key findings from the services track. The main presenters were CEOs and CFOs, in our attempt to get the vision of the companies.

Presenters included Karen Basian (CFO, 724 Solutions), Larry Roshfeld (senior vice president, Aether Systems), Mark Lurie (CEO, @hand), Paul Vilandre (CFO, AirFlash), Tom Trinneer (vice president, data product development, AT&T Wireless Group), David Cox (president and CEO, BlueKite.com), Michel Fattouche (president and CEO, Cell-Loc), Rick Dalmazzi (president and CEO, Certicom), Sachi Gerlitz (executive vice president, network systems, Comverse), Tim Connolly (director, operator mobile Internet solutions, Ericsson), Venkatesh Shukla (CEO, Everypath), Richard Onyon (president and CEO, fusionOne), S. Lee Hancock (president and CEO, Go2 Systems), Aaron Dobrinsky and Frank Elenio (CEO and CFO, GoAmerica), Stephen Maloney (president and CEO, i3 Mobile), Arun Sarin (CEO, INSP), Bijan Sanii (COO, acting CEO and president, Infowave Software), Dayakar Puskoor (CEO, JP Systems), Tim Dreisbach (chairman and CEO, Metricom), Ben Waldman (vice president, mobile devices management, Microsoft), Ronald Spears (president and CEO, MobileLogic), David Coelho (president and CEO, MobileSys), Walt Purnell (president and CEO, Motient), Michael Maggio (president and CEO, NetMorf), Allyson Fryhoff (vice president, sales and business development, OracleMobile), Don Listwin (president and CEO, Phone.com), Bruce Scott (president and CEO, PointBase), David Sutcliffe (president and CEO, Sierra Wireless), David Hose (president and CEO, SignalSoft), Vikram Chachra (vice president, business development, Snaz.com), Marc Owensby (CEO, SpotCast), Brian Charlesworth (CEO, Talk2 Technology), John Sims (president and CEO, Tantau Software), Jonathan Oakes (CEO, ThinAirApps), Oliver Hilsenrath (chairman and CEO, US Wireless Corp.), and Carolyn Everson (vice president, Business Development, Zagat.com).

When we decided on the theme of our conference, "Unlocking the Value Chain," we knew that it would be difficult to get hard answers, but we attempted to present the companies in the chain so that investors could familiarize themselves with the players. The broad consensus was that the market is huge and likely large enough for many of the players to win.

***Reiterate 1 Buy on Leaders in the Space***

Following the upbeat presentations by many industry leaders, we continue to recommend Metricom, Aether and AT&T Wireless on the services side, and Comverse, Phone.com, Ericsson, Sierra Wireless and SignalSoft on the infrastructure side. Our Wireless Internet Conference reaffirmed the tremendous potential for upside we see in these stocks, and we believe they represent a unique play on the wireless data space.

***Conference Themes—  
Location, B2B Addiction, and, of Course, the Value Chain***

We spent much of the conference looking at the location-based businesses. There are two distinct services in this area: the companies that find the x-y coordinate (such as US Wireless Corp.), and the players that write software to use the x-y coordinate (such as AirFlash, SpotCast and SignalSoft). We believe the players in this market have a lot to gain, as carriers will be forced to adopt a location technology (per the FCC mandate), and targeted advertising, mobile resource tracking, and location-based billing will prove valuable to the users (i.e., they will pay for it). While the FCC has let the October 2000

deadline slip until November 2000, the speakers believe that the FCC is firm and will enforce the mandate. Regardless, location is likely to drive a big investment cycle, as some of the players (notably Cell-Loc) are building out even without an “anchor” carrier tenant.

Another overriding theme of the conference was the focus on the enterprise. Of the 36 companies presenting, few, if any, were B2C companies. We believe that enterprises and mobile professionals will be the first to adopt wireless data. This is what happened with wireless voice. Thus, we tend to favor business plans that are B2B in nature.

Though the majority of the business plans were more B2B, we still learned much about strategies to get the population to become addicted to the wireless data product from companies from different segments of the value chain. The word *viral* was used in numerous presentations, and in fact it makes sense. If four out of five friends in a group are SMSing all day, the fifth is bound to get “sucked in.” This was evident with wireline instant messaging in the United States and SMS in Finland.

One of the most interesting sessions of the conference was a panel that discussed the value chain. We asked buy-side investors and panelists (including a content provider, content aggregator, carrier, and vendor) to place an NPV on the different parts of the chain, in which the sum of these NPVs (for the different links) had to be 100. Our results were quite interesting. The carriers scored highest, according to both investors (who gave them 38) and panelists (at 37). Panelists and investors emphasized that this high value reflects the fact that carriers are controlling the real estate. On the whole, the investors thought that content providers were worth more (with an average NPV of 22), as shown in Figure 1, while the panelists attributed only 9 points of NPV, as shown in Figure 2. Our content provider on the panel (Zagat.com) stated that, while content is important to users, the lower value attributed to content (from the panelists) reflects the state of negotiations today. However, as investors also represent users of wireless data (who value content), the power in these negotiations with carriers could shift over time. Also interesting was that adding location to advertising could increase CPM to \$250 from \$30, per Zagat.com. Location was given 3 NPV points by investors and 6 NPV points by panelists.

**Figure 1:** Investor Results

	<b>Investor 1</b>	<b>Investor 2</b>	<b>Investor 3</b>	<b>Investor 4</b>	<b>Average</b>
<b>Content Provider</b>	30	35	3	20	<b>22</b>
<b>Content Aggregator</b>	5	1	1	10	<b>4</b>
<b>Location Services</b>	5	5	1	2	<b>3</b>
<b>ASP</b>	10	5	3	2	<b>5</b>
<b>Reseller</b>	0	1	2	4	<b>2</b>
<b>Wireless Carrier</b>	30	30	70	20	<b>38</b>
<b>Equipment Vendor</b>	5	15	20	30	<b>18</b>
<b>Capital Providers</b>	5	8	implied	10	<b>8</b>
<b>Other</b>	10	0	0	2	<b>3</b>

*Source: Lehman Brothers.*

**Figure 2:** Panelist Results

	<b>Panelist 1</b>	<b>Panelist 2</b>	<b>Panelist 3</b>	<b>Panelist 4</b>	<b>Panelist 5</b>	<b>Average</b>
<b>Content Provider</b>	10	5	5	10	15	<b>9</b>
<b>Content Aggregator</b>	10	2	15	5	10	<b>8</b>
<b>Location Services</b>	10	5	10	5	0	<b>6</b>
<b>ASP</b>	40	10	10	5	10	<b>15</b>
<b>Reseller</b>	5	3	7	5	5	<b>5</b>
<b>Wireless Carrier</b>	15	50	40	45	35	<b>37</b>
<b>Equipment Vendor</b>	3	15	3	5	20	<b>9</b>
<b>Capital Providers</b>	5	10	10	20	5	<b>10</b>
<b>Other</b>	2	0	0	0	0	<b>0</b>

Source: Lehman Brothers.

### **CONFERENCE HIGHLIGHTS INFRASTRUCTURE GROWTH THEMES**

Our Wireless Internet Conference underscored many of the growth themes identified in our September 2000 industry report, "Unlocking the Value Chain of the Wireless Internet." Major themes included the importance of core infrastructure upgrades, the extension of enterprise applications to the mobile environment, the growth of location, enhanced services and messaging applications, and the critical role of network security.

Following a series of upbeat presentations from the management teams, we are reiterating our 1 Buy ratings on core wireless Internet players Comverse, Phone.com, Ericsson, Sierra Wireless, and SignalSoft.

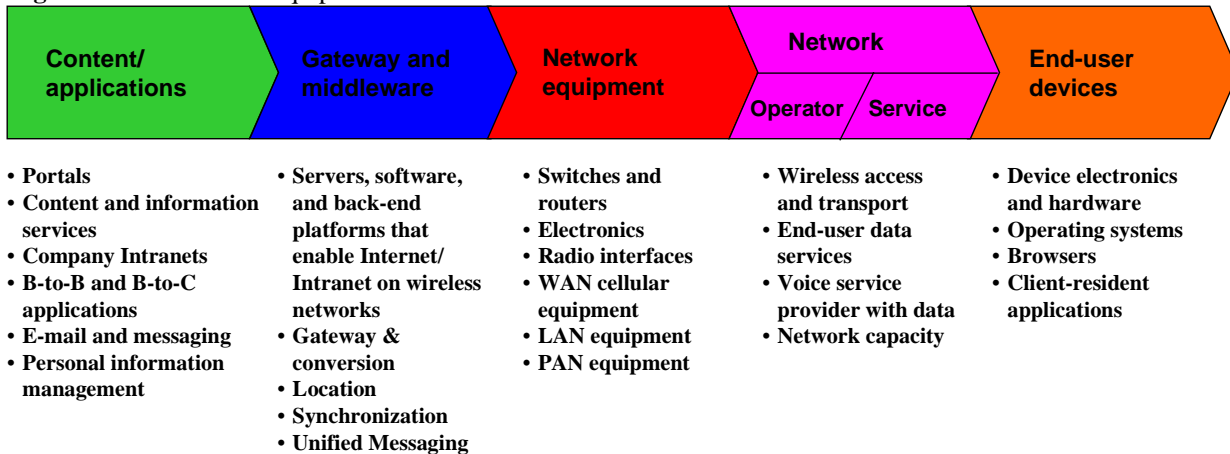
In addition, several private and not rated companies gave compelling presentations. In particular, we highlight Certicom, the early leader in providing authentication and VPN services on the wireless Internet, and Infowave, which offered a live demo of its Wireless Business engine, which extends corporate messaging applications, such as Microsoft Outlook, to a range of wireless devices. Both Infowave and Certicom are publicly traded in Canada. Certicom is also traded in the United States.

### **Lehman Brothers Wireless Equipment Value Chain**

We maintain that substantial opportunities are likely to exist for companies across the spectrum of the emerging mobile Internet value chain. From an equipment perspective, we believe that the development of new network architectures will likely ensure that numerous opportunities are created for innovative new vendors in addition to driving strong growth for established players. We consider that, along with the development of new content and applications, the surge in data traffic should ensure that new gateways and middleware play

an increasingly important role in the development of the network. This is likely to have positive implications for many vendors ranging from SignalSoft and Phone.com to Wireless Knowledge, Infowave, Puma, FusionOne and Pointbase. Gateways, middleware, and synchronization will provide the ability to link the new content and applications to devices. As we have discussed already, the deployment of new data-enabled networks is also providing dramatic growth opportunities in network infrastructure equipment as new switches, routers, and wide area networking systems are deployed, and in end-user devices as consumers embrace a new generation of wireless handsets. The next-generation devices will be powered by new multimode chipsets and controlled by new operating systems and browsers creating a wealth of opportunities for vendors addressing these high-growth arenas.

**Figure 3: The Wireless Equipment Value Chain**



Source: McKinsey and Lehman Brothers.

### **Enterprise Applications and Wireless Data Solutions Likely to See Dramatic Growth**

In examining the spectrum of opportunities presented by the growth in wireless data from the perspective of infrastructure vendors and application developers, we would highlight our view (which appears to be skewed by many of the conference presenters) that the enterprise and mobile professional markets are likely to see the most dynamic growth rates. While wireless consumers are likely to continue to generate strong revenue growth opportunities for carriers, we believe that the addition of higher-speed data across wireless networks could unleash a powerful wave of new applications and services for commercial users. For the enterprise and mobile professional markets, the prospect of secure and reliable access to corporate intranets, extranets, e-mail services across wireless networks should present a myriad of new possibilities. Many large corporations in areas such as financial services and real estate, including Lehman Brothers, are already realizing the potential for productivity improvements from mobile corporate network access. We believe that the opportunities presented by the development of new platforms and applications for the mobile enterprise market should offer a buoyant backdrop for numerous emerging companies, including players such as 724 Solutions, Infowave, MobileLogic, NetMorf and Wireless Knowledge.

**IMPRESSIVE  
DEVELOPMENT IN  
U.S. MOBILE  
INDUSTRY OVER  
THE PAST 12  
MONTHS**

***The United States Is Ahead of Europe***

The degree of development that has occurred in the U.S. mobile industry over the past 12 months has positioned the United States ahead of Europe in a number of different aspects with respect to mobile Internet. Whilst this may be a temporary lead, with the Europeans potentially leapfrogging the United States in the next six to 12 months as GPRS is rolled out, it is nonetheless significant and is positive for (1) companies that have exposure to the U.S. mobile market, and (2) the European mobile industry, in the sense that developments in the United States will inevitably be incorporated in Europe over time, benefiting the European market's development.

***Data Devices and Mobile Data Cards***

The lack of datacentric handsets has been one of the key bottlenecks to mobile data development in Europe—WAP phones have been slow to materialize and have been plagued with quality issues. Furthermore, although most networks are now upgraded for GPRS, GPRS phones are in extremely limited supply, if available at all. We believe that GPRS is essential for the further development of the mobile data market, being packet-switched and providing “always on” capability.

While the United States is no further advanced than Europe with respect to GPRS (or the CDMA equivalent, 1X), and lags Japan in the sophistication of its phones, the United States appears to be taking the lead in the development of wireless PDAs, pocket PCs, laptops, etc.

U.S. operators are currently utilizing their CDPD networks (19.2kbps, packet-switched) to support applications like mobile e-mail and office calendar and contacts synchronization through devices such as the RIM Blackberry and Pocket PCs (see Figure 4). Mobile connectivity capability is either embedded in the hardware (as with the Blackberry) or achieved by plugging in/attaching a wireless modem or PCMCIA data card. In our experience, this technology is less developed in Europe, due primarily to the limiting circuit-switched nature of GSM and HSCSD.

**Figure 4:** Mobile Data Devices



*Source: Research in Motion, Hewlett Packard.*

These technological developments are important, as we believe that mobile e-mail and mobile intranet/extranet access will be some of the killer applications for early adopters, generating substantial uplifts in ARPU and reduced churn based on the applications' convenience and productivity advantages. GPRS, once deployed commercially across Europe, will be able to quickly leverage the advances made to date in the United States with regard to terminals and PCMCIA data cards.

### ***More Developed Aspects of the Value Chain***

The elements of the “mobile Internet value chain” have developed very quickly in the United States. For example, we heard from numerous independent wireless application service providers (WASPs) and Web-hosting companies that are selling their products to both the operators and direct to enterprises.

While this may sound negative for the operators at first, we believe that it will result in more rapid development of the industry, which should ultimately benefit all aspects of the value chain, including the operators, as discussed more fully in the following.

### ***Mobile Internet—Based on Partnership Rather than Competition?***

There has been a tremendous amount of debate on the question of who is best placed to capture the largest element of the mobile Internet value chain. Although we do not have any concrete answers at the moment, we believe that many companies across all aspects of the chain are coming to the realization that partnership rather than outright competition may be a better solution.

In particular, we believe that many software/middleware companies and service providers are concluding that a strategy that involves competing directly against the operators could be counterproductive and that a more attractive strategy from a value-creation perspective is partnership with the operators. That is, by focusing on the areas where the operators do not have expertise/competence, new entrants can work with the operators to extend and differentiate their product offerings, with the added benefit of time-to-market advantages. In turn, this should both accelerate the development of the market and increase the total value of the market due to the avoidance of (1) competition and (2) duplication of invested capital. In essence, we perceived that a number of middleware/software players and service providers have come to the conclusion that it is better to have 2% of a \$100 billion market than it is to have 5% of a \$10 billion market, or even worse, 0% of the market regardless of its size.

Obviously, it is not quite as simple as this, and there are numerous new entrants that are intent on (1) taking the operators on in their traditional markets and/or (2) establishing dominant positions in new links of the value chain. Unquestionably, the operators face very significant threats and challenges to ensure that they do not become “dumb pipes.” However, from the operators’ perspective, we were encouraged that the competitive and strategic threats facing the operators appear to be less real than what the market is discounting and what we have been expecting.

### **UNITED STATES CREATES POSITIVE PRECEDENT FOR EUROPE**

We believe that the conference provided some interesting insights into the current state of development of the U.S. mobile Internet industry. We were particularly impressed by the advanced stage of development of the U.S. industry relative to that of Europe.

This is positive on a number of different fronts, as (1) it creates another positive precedent for mobile data/Internet, (2) it is positive for the fundamentals and investment cases of the companies that have direct exposure to the U.S. mobile market (i.e., Vodafone and DT), and (3) it is likely that some or all of these aspects will be transferred to Europe to the benefit of the European mobile industry’s development.

The “U.S. experience,” combined with impressive WAP ARPU trends announced by BT Cellnet, fill us with increased confidence that the European mobile Internet opportunity is immense.



**IMPRESSIVE  
COMPANY  
PRESENTATIONS**

Lastly, we believe that there are increasing signs that the threat to the mobile operators from other players may be significantly less intense than what the market is currently discounting—partnership rather than outright competition appears to be gathering increasing support as the preferred strategy among the new entrants.

***Increased Confidence in AT&T's Data Strategy***

At the Wireless Internet Conference, AT&T Wireless (AWE – \$21; 1 Buy) spoke of its wireless data service, PocketNet, which has seen steadily increasing numbers of users since its inception. Most of the users, currently around 100,000, subscribe to the free basic service, which includes unlimited access to a personal Web site, favorite bookmarks, and access to AT&T's "walled garden" of Web sites. Flat-rate pay service plans, ranging in cost from \$6.99 to \$14.99 per month for consumers and up to \$19.99 per month for enterprises, offer greater content and functionality. The user of the free PocketNet service is made continually aware of the increased offerings of these pay plans, since the menu format is standardized across the service levels. Subscribers are able to view all menus, as shown in Figure 5, while access to the premium service menus remains restricted to those users with monthly subscriptions. Unique aspects of the service are the flat-rate pricing, the personalization of service through the organization of different decks, ease of use, and a large number of Web sites, currently numbering around 50.

**Figure 5:** AT&T Wireless PocketNet Handset: Mitsubishi *Mobile Access T250*



Source: AT&T Wireless.

The firm's rationale behind offering the free service is that by easily attracting customers, the service will achieve greater penetration in this new market. In addition, the attraction of free access to the walled garden will lure customers into purchasing new handsets, thus increasing the penetration of data-enabled handsets into the subscriber base and allowing for the opportunity to upsell customers to the subscription data plans. Speaker Tom Trinneer, vice president, Data Product Development, made the point that users of the basic (free) service are given menu options, such as calendaring, which are only available in the plus service. However, when the user clicks on such options, he/she is alerted that for \$6.00–\$14.99 per month, they could receive it. We felt this was an excellent way to upsell.

Early data show, on average, one to two sessions of use per day per PocketNet user, which management considers very positive. In conjunction with PocketNet, AT&T Wireless is building a mobile portal, which will offer services to consumers, enterprises, and business partners. As a part of this portal, which they termed a "portal of portals," paying subscribers have access to AOL and Yahoo!, to which they do not have access through the basic service, due to the limiting walled garden.

Trinneer addressed the tension between traditional portals and carriers. At first blush, one would think that carriers would not want such portals (which have customer loyalty) on their site because they could take loyalty from the carriers. In addition, the percentage of m-commerce revenue to AWE is lower because they must share it with AOL or Yahoo!.

However, in order to get to such portals, AWE subscribers must pay \$14.99 per month. AT&T's belief is that the seemingly dangerous affiliation with an established portal, such as AOL or Yahoo!, is justified if customers are so desperate for such access that they are willing to pay a monthly fee.

Trinneer also discussed the need for exceptional applications and content within the walled garden. If a user has a negative first experience with wireless data, he/she is unlikely to try the product again for a long time. By blanketing the walled garden with useful and popular sites, such as Amazon and Zगत, users will be more likely to like the product and be upsold. Similarly, the calendar and other applications on the plus service must be easy to use, or customers will simply use another PDA device (and not pay AWE \$6.99 per month). In the effort to continually enhance the user experience, AWE recently partnered with InfoSpace for promotional purposes and Qpass for their e-wallet expertise.

The company is comfortable with the financial estimates for the quarter, except for churn, which they expect will be higher than previously forecast. In the near future, however, AT&T Wireless expects churn to decrease across the entire industry. In particular, they plan to match this improvement through both the better management of customers and the observed increased "stickiness" of data customers. Furthermore, quality—specifically in the New York metropolitan area—is improving due to the recent technology switchout. Quality has returned to pre-Digital One Rate levels, but, according to AT&T, a gap remains between consumer perception and reality, proving that subscribers have a relatively long memory.

The firm currently focuses on targeting the right customers, as evidenced by the success of Digital One Rate. With the advent of wireless data, AT&T Wireless is working on formulating the optimum plan and service to best suit its subscriber base. We continue to see AT&T Wireless as a respectable value and reiterate our 1 Buy rating on the stock.

### ***Upbeat Presentation and Solid Demo from Metricom***

Metricom (MCOM – \$27.31; 1 Buy) chairman and CEO Tim Dreisbach delivered an upbeat presentation on Tuesday, September 19. Dreisbach touted the company's reselling agreement with GoAmerica, adding the distributor to an impressive list including MCI WorldCom, Wireless WebConnect, Juno and others. In addition, while the Ricochet network in New York City is not yet available, Dreisbach and CTO Mike Ritter presented a very well-received demonstration of the service. Investor response was positive.

**Figure 6:** Picture of Ricochet Modem as Attached to Laptop



Source: Metricom.

The production of modem cards is proceeding well. They are expected in the market in early 2001. We were shown a demo of the engineering version of the card, and it was encouraging. We believe this card will position MCOM well. Currently users must Velcro a device to their laptop. The modem cards will put MCOM in the same class as CDPD users (in terms of sleekness of device) and will have much faster speed.

With the quarter end approaching, the company did not give direct guidance in terms of subscriber numbers, but did say that management is very pleased by the uptake rate for Ricochet service and encouraged by the amount of time new subscribers are spending on the network. In the first 10 days of September, Dreisbach said that the average customer used the service multiple times per day, with average Ricochet sessions lasting 45 minutes, and moved an average of 10 megabytes of data back and forth per use. He also said that the user experience feedback was positive. User speeds are supposed to average 128 Kbps, but a few users have reported experiencing speeds of 220 Kbps, and one Metricom engineer experienced speeds of 270 Kbps.

With only Atlanta and San Diego launched, Metricom is continuing to work on its buildout. We believe that investing in MCOM is indeed risky, as there are crucial execution issues; but with current trading prices allowing for 270% upside to reach our price target, we believe the upside potential leading to our \$101 year-end 2001 price objective is proportional to the investment risk. Following is a map of the Ricochet deployment schedule.

**Figure 7: Ricochet Deployment**



Source: Metricom.

### ***Aether Offers Great Promise for the Application Space***

Larry Roshfeld, senior vice president, products, of Aether Systems (AETH – \$120; 1 Buy), suggested in his keynote speech that there is great opportunity for the applications space. The product pipeline is coming along, but the applications for wireless Internet are not yet there, placing first mover Aether Systems in a strong strategic position. In addition, as Aether provides its customers with a comprehensive set of products, solutions, and services, it is well-positioned to continue its excellence in the financial services market and to grow its presence in its newer verticals: field sales and service, transportation, health care and m-commerce.

**Figure 8:** Aether: Leveraging Services for Multiple Markets

Source: Aether Systems.

Lastly, the company reiterated its focus on the enterprise customer. This was a recurring theme through most of the company presentations at the conference. Roshfeld also explained its intent to upsell existing customers to horizontal offerings.

Aether, as a true end-to-end provider, has expanded vertically from its initial financial services focus into a number of new markets, and we believe it will continue to do so. It is currently in the midst of its roadshow offering of 3.5 million shares. We believe this will alleviate much of the overhang that has put pressure on the stock of late.

We continue to like Aether and believe it will be a true winner in this space. Aether is one of the few pure-play wireless data companies. In addition, it has a clear first-to-market advantage, as it has acquired many companies that are leaders in vertical markets attractive to wireless. We believe Aether will continue such acquisitions that will increase its value. Please see our initiation report on Aether, dated September 8, for a full description of our acquisition assumptions. Also, with more than \$1 billion in cash on its books, Aether is in an excellent financial position to fund its ongoing business and invest in new businesses. Aether Capital and an excellent management team are yet more reasons for our 1 Buy rating. With a \$210 price target, we see the potential for 75% upside from current trading levels.

### **Comverse Technology: Continuing to Increase Market Share; Visibility Strengthening; Reiterate 1 Buy**

Sachi Gerlitz, executive vice president, Comverse Network Systems (CMVT – \$93.69; 1 Buy), highlighted Comverse Technology's continuing momentum in the wireless messaging and enhanced services market, where Comverse's market share continues to expand and has now reached 30%. Comverse continues to develop a stream of new services for operators and is extending its product offerings into areas such as instant messaging, voice portal, and multimedia 3G services. In the unified messaging arena, Comverse is likely to increase its market-leading customer base to 40 by the end of the fourth quarter from 35 at the end of the second quarter.

Comverse also spotlighted its recent acquisition of gateway player Exalink, which offers a protocol-independent, router-based gateway solution. Management has suggested that Exalink is likely to begin generating revenue in the second half of 2000 and is likely to exceed \$20 million in 2001.

With visibility and market share increasing and a steady stream of new services in the pipeline, we are reiterating our 1 Buy rating on messaging powerhouse Comverse. When it reports its third quarter, we believe that Comverse will continue its 26-quarter streak of meeting or beating consensus expectations. Our estimates are for revenue of \$304 million and EPS of \$0.36.

### ***Phone.com: First Keynote for New CEO Don Listwin Highly Upbeat***

Phone.com's new CEO, Don Listwin, formally in his new role for just 10 days, laid out his vision for the combined Phone.com (PHCM – \$106; 1 Buy) and Software.com (SWCM – \$167.44; not rated). He reiterated Phone.com's commitment to supporting all wireless data protocols, as WAP is likely to evolve rapidly over the next several years. Phone.com plans to offer carriers a gateway solution that is a complete platform for wireless applications. On top of the platform, the company plans to layer carrier-class, IP-based applications, led by its Onebox unified messaging application. These value-added services are designed to help carriers offset continued price declines in voice services, with pressure from Voice over IP (VoIP) services beginning over the next 12 months. Phone.com is planning to aggressively expand its workforce, underlining management's confidence in the business outlook. Phone.com is looking to add 1,000 employees over the next 12 months to achieve these goals.

Mr. Listwin emphasized that the merged firm will deepen its relationships with key partners such as Cisco, IBM and HP to approach the enterprise market. In addition, he noted that the Software.com merger is likely to close before Thanksgiving.

Given its increasing momentum and improving visibility, we believe that Phone.com is likely to exceed our third-quarter estimates of \$35.6 million in revenue and a net loss of \$0.21 per share. We are reiterating our 1 Buy rating on Phone.com.

### ***Ericsson: Wireless Infrastructure Powerhouse Expanding Profile in Wireless Applications***

Tim Connolly, director of Ericsson's Mobile Internet Solutions business, highlighted Ericsson's strength in the mobile infrastructure arena as the business continues to gain momentum. In addition, Ericsson (ERICY – \$17.31; 1 Buy) is broadening its profile in the applications arena, where it now has 8,000 engineers developing mobile Internet applications. Mr. Connolly underscored Ericsson's continued dominance in the GSM arena, with more than 41% of the new GPRS contract wins to date. He also highlighted the company's strength in 3G, where it has won more than \$1.8 billion in new contracts as of June.

Separately, Ericsson reiterated its comfort with current guidance for the third quarter and full year, despite well-publicized challenges in the handset segment. Our third-quarter estimates are SKr65.4 billion in revenue and \$0.05 in EPS. We reiterate our rating of 1 Buy.

**Sierra Wireless: Continued Leadership in Wireless Modems**

Wireless modem leader Sierra Wireless (SWIR – \$57.69; 1 Buy) delivered an upbeat presentation on the second day of our conference. The presentation built on its momentum generated during the first day of presentations, when many of the wireless service companies had highlighted the Sierra Wireless AirCard 300 in the illustration of their wireless application platforms. President and CEO David Sutcliffe highlighted growing business strength and strong demand trends at the company following a series of recent initiatives, including:

- The recent launch of Sierra's new CDMA PC card (AirCard 510) for Sprint PCS;
- The recent marketing and bundling agreements with companies such as Infowave (high-speed wireless LAN connection enabler), MobileLogic and GoAmerica;
- A joint promotion and bundling agreement with Compaq's iPAQ PDA device (which has seen strong sales to date); and
- A new international, volume commitment contract China's Hycomm to resell Sierra's modems.

Mr. Sutcliffe also commented on the company's EDGE and Ricochet modem supply commitments for AT&T Wireless and Metricom, respectively, which remain on track for commercial shipment in the third and first quarters of 2001, respectively. We note that the integration of Sierra's recently acquired CDMA module business from QUALCOMM also appears to be on track. We note that Sierra has also made a strategic investment in Synchronpoint Wireless, which focuses on the development of Bluetooth technology.

In addition, we are encouraged that Sierra is well positioned to benefit from opportunities in CDMA in Korea, Japan, and Australia, and opportunities in the United States through operators such as Verizon appear to be growing. Sierra is also likely to break into Telus and Bell Mobility in Canada.

We note that Sierra remains the dominant wireless modem player with the broadest and most sophisticated product platform in terms of functionality and performance. With business in its core AirCard and OEM CDPD modems growing rapidly, Sierra stands to record an 80% year-over-year revenue increase in 2000.

We believe that our third-quarter estimates for Sierra of \$11.9 million in revenue and a net loss of \$0.06 per share are highly conservative. We are reiterating our 1 Buy rating on modem leader Sierra Wireless.

**SignalSoft: Excellently Positioned in Location-Based Services**

SignalSoft (SGSF – \$33.38; 1 Buy) CEO David Hose underscored the company's excellent position in location-based services, a market that conference speakers repeatedly characterized as one of the most exciting segments of industry. SignalSoft's leading platform supports the delivery of location-enabled content across all major air interface standards and equipment from all of the leading vendors.

We believe that SignalSoft remains comfortable with our revenue estimates of \$8.5 million and \$9.7 million in the third and fourth quarters, and we are reiterating our 1 Buy rating.

### ***Public Services Companies – Room for Multiple Players in the M-Commerce Market***

GoAmerica (GOAM – \$7.44; not rated) discussed its focus on the enterprise. CEO Aaron Dobrinsky discussed his recently announced relationship with Metricom. GOAM will charge consumers the same price for MCOM service as they do for service on other (slower) pipes. GOAM also discussed offering its service through technologies other than CDPD going forward.

We became more convinced that m-commerce can thrive in today's economy, even with additional companies like content aggregators or ASPs taking a few more pieces of the pie. Arun Sarin, CEO of InfoSpace (INSP – \$34.25; not rated), gave an interesting keynote address, mentioning that 67% of the nation's GDP is services-based revenue, that services revenue tends to be extremely high-margin, and that e-coupons and incentives sent over a mobile phone—while eating somewhat into margins—can still be extremely successful. As an empty restaurant is a zero-revenue restaurant, it can afford to lose a couple of points in margin to the carriers and InfoSpace during its off-peak hours to at least generate some revenue (and corresponding profit, though at a lower margin).

Wireless location proved to be an area that, while less well-known, sparked a lot of interest among our investors. The conclusion among companies, as well as in our Location Services Panel discussion on the second day of the conference, was that multiple solutions will be available, and each will have its place in fulfilling carriers' needs to meet the FCC mandate by October 2001. Oliver Hilsenrath, chairman and CEO of US Wireless Corp. (USWC – \$17.5; not rated), explained his belief that it is not only the carrier that owns the location of its subscribers, but also the location provider that shares in the ownership of that information. Hilsenrath also stressed that one of the drivers of E-411 information services will be that subscribers will utilize their wireless devices as travel companions, as “mobility” (ergo travel) is inherent in these devices. Motient (MTNT – \$10.5; not rated) president and CEO Walter Purnell discussed the growth that has been seen in the messaging market and expectations for high uptake rates in the future. Current customers transmit more than 100 million messages over the Motient network each month.

Stephen Maloney, president and CEO of i3Mobile (IIIM – \$6.5; not rated), confirmed the current trend to “partner with everyone” and gave the logical rationale that wireless Internet technology and content are moving at Internet speeds—thus, it behooves a company to make as many strategic alliances as possible. Karen Basian, CFO of 724 Solutions (SVNX – \$50; not rated), brought up the interesting fact that the company's strongest competitors are the IT departments of its potential customer base, the financial services industry. However, by adding layers to its offering via additional geographies, languages, and currencies, it offers the immediate infrastructure software to enable personalized online brokerage and e-commerce capabilities.

### ***Private Services Companies—Impressive Innovation***

We are increasingly bullish on the prospects for wireless Internet, in part because of the innovation we are seeing come out of some of the private companies showcased at the conference. Snaz.com kicked off the private company presentations after the Aether keynote. Snaz provides wireless one-click shopping and has relationships with many popular vendors.

Allyson Fryhoff, vice president, sales and business development, of Oracle Mobile, provided investors with part of the OracleMobile view of the future, describing a segment of the company's open services gateway initiative (OSGI). Ms. Fryhoff discussed the

possibility of enabling all appliances in one's home, and the ability, for example, to turn off one's security system remotely via a wireless device if a delivery is arriving early and the delivery person needs to enter the home. Richard Onyon, president and CEO of fusionOne, a wireless synchronization company, impressed upon his audience the importance of privacy and security in any wireless application, especially as we enable greater wireless access to more personal information.

The general consensus is that, though the killer app has yet to be determined, short messaging service (SMS) in the United States could see huge uptake rates in the same way as AOL's Instant Messenger (IM) service has gained in popularity. MobileSys president and CEO David Coelho stressed that the experience of MobileSys in the messaging space positions the company well to use its wireless messaging engine to enable two-way integration into e-business applications.

Cell-Loc president and CEO Michel Fattouche gave an interesting presentation; contrary to other location providers, Cell-Loc is giving the E-911 (emergency) services to carriers for free.

Personalization was also a recurring theme throughout the conference, likely because, though mobile devices allow for increased information flow, the form factor is naturally smaller and more compact than a full-size PC screen, and personalization reduces the likelihood of being "spammed" while increasing the efficiency with which companies can target useful, mission-critical information. AirFlash CFO Paul Vilandre described the infrastructure of AirFlash, stressing the importance of personalization. AirFlash's context engine can "remember" consistent behavior—for example, the types of restaurants for which a user consistently searches, or the movie theaters to which a user goes.

Marc Owensby, CEO of SpotCast, presented one of the most convincing ways advertising may lead to revenue. SpotCast is not dependent on advertising revenue; rather, it garners revenue from its platform, enabling carriers to use its technology to sponsor airtime with advertisements at the subscriber's request. This is permission-based, targeted advertising (i.e., one 10-second ad "spot" equals one free minute of airtime), and it is already seeing great success in Asia and early rollouts in Europe.



GLOBAL EQUITY RESEARCH

New York (1) 212 526-7323

London (44) 171 260-2241

Tokyo (813) 5571-7355

Hong Kong (852) 2869-3198

WIRELESS INTERNET

**Wireless Services**

U.S.

John M. Bensch, CFA 212 526-1869  
 Jennifer A. Cooke, CFA 212 526-4782  
 Elisabeth H. Job 212 526-3765

Europe

Jo Oliver (44) 20 7260-2237  
 Robert Davis (44) 20 7260-1993

**Internet Infrastructure Services**

U.S.

William Garrahan 202 452-4727  
 Sean P. Rourke 202 452-4735

**PC & Internet Software**

U.S.

Michael E. Stanek 650 289-6027  
 Israel Hernandez 415 274-5395  
 Amy S. Feng 650 289-6023

**Telecom Equipment:**

**Wireless & Internet Infrastructure**

U.S.

Tim Luke 212 526-4993  
 Jeff Kvaal 212 526-2216  
 Noelle Swatland 212 526-3770

**Telecom Equipment: Europe**

Europe

Philippe Schmitt (44) 20 7256-4708  
 Dominique Nguyen (44) 17 1256-4709

**Semiconductors & PC Hardware**

U.S.

Daniel T. Niles 415 274-5252  
 Karl K. Richter 415 274-5255

**Semiconductors & Communications**

U.S.

Arnab K. Chanda 415 274-5370

**Enterprise / Internet Software**

U.S.

Neil J. Herman 212 526-6093  
 David Lehman 212 526-5996

Europe

Brian E. Skiba (44) 20 7256 4289  
 Elise Horowitz (44) 20 7260 2972  
 Mairi Johnson (44) 20 7256 4287  
 Michael Dillon (44) 20 7260 2505  
 Joe Spooner (44) 20 7260 2505  
 Elisabeth Jamieson (44) 20 7260 2737

Israel

Tobias Fischbein 00-9723-696-6122

For additional copies of Lehman Brothers research reports, call (201) 963-0572 or fax (201) 216-0705.

Lehman Brothers, Inc. has managed or co-managed within the past three years a public offering of the securities of America Online, AT&T Wireless Group, Metricom Inc., Sierra Wireless and SignalSoft Corp.

Lehman Brothers Inc. makes a market in the securities of Aether Systems, Amazon.com Inc., Comverse Technology, Ericsson, Metricom Inc., Microsoft Corp., Phone.com Inc., Sierra Wireless, SignalSoft Corp. and Yahoo! Inc.

Any OTC security mentioned herein may not be blue skied in all states; brokers should check the FCI system or call the Blue Sky department before placing any order.

Key to Investment Rankings: This is a guide to expected total return (price performance plus dividend) relative to the total return of the stock's local market over the next 12 months. **1 = Buy** (expected to outperform the market by 15 or more percentage points); **2 = Outperform** (expected to outperform the market by 5-15 percentage points); **3 = Neutral** (expected to perform in line with the market, plus or minus 5 percentage points); **4 = Underperform** (expected to underperform the market by 5-15 percentage points); **5 = Sell** (expected to underperform the market by 15 or more percentage points); **V = Venture** (return over multiyear time frame consistent with venture capital; should only be held in a well-diversified portfolio).

No part of this report may be reproduced in any manner without the written permission of Lehman Brothers Inc. We do not represent that this information is complete or accurate and it should not be relied upon as such. All opinions expressed herein are subject to change without notice. Lehman Brothers Inc., its affiliated companies, or their respective shareholders, directors, officers and/or employees, may have long or short positions in the securities discussed herein. The securities mentioned in this document may not be eligible for sale in some states or countries, nor suitable for all types of investors; their value and the income they produce may fluctuate and/or be adversely affected by exchange rates, interest rates or other factors. This document has been prepared by Lehman Brothers Inc. on behalf of Lehman Brothers International (Europe), which is regulated by the SFA. ©2000 Lehman Brothers Inc. All rights reserved. Member SIPC.