everything in communications has been turned on its head due to the unstoppable convergence of mobility and the enterprise. As more services collide on mobile networks, the business models that support the entire wireless ecosystem are being strained and redefined like never before.

Verticals markets present wireless carriers with a host of new opportunities and challenges. Just because wireless technology and enterprise infrastructure should work together doesn’t mean they do. As carriers target these new customers and encourage them to move from a wired to a wireless world, they’re adapting their business strategies according to the trends and problems that businesses face in each market.

Carriers climb the vertical ladder

By Matt Kapko

Abstract: Vertical markets present wireless carriers with a host of new opportunities and challenges. Just because wireless technology and enterprise infrastructure should work together doesn’t mean they do. As carriers target these new customers and encourage them to move from a wired to a wireless world, they’re adapting their business strategies according to the trends and problems that businesses face in each market.
By both embracing existing technologies and infrastructure already in place in some industries and custom-building end-to-end solutions for others, carriers are pursuing a unique blend of strategies to earn new business and extend the viability of their value proposition to a deep pool of new customers.

Top enterprise executives at Sprint Nextel Corp. and AT&T Mobility talked with RCR Wireless News about the trends they are seeing in each of these markets, the adaptations their companies are undergoing to appeal to these new customers and what strategies they are implementing to best take advantage of the opportunity. Unfortunately, both Verizon Wireless and T-Mobile USA Inc. declined multiple requests to discuss their efforts in enterprise. To be sure, neither carrier is ignoring vertical markets – they’re just being more tight-lipped about that side of their business.

Wireless is not exactly new to the enterprise game. Wireless communications have been deployed across many industries for the better part of two decades now. The Internet protocol-based infrastructure that’s being deployed by carriers across the globe is changing everything today. Mobile broadband is presenting industries, new and old, with ideas and solutions that can radically transform their businesses.

Existing 3G networks and the fast-approaching promise of 4G technologies are making new innovations possible across practically every major industry. Mobile broadband has and continues to effectively multiply the business-use cases on which it either can improve upon dramatically or achieve for the first time. At its very best, mobile broadband can reduce costs while increasing safety, efficiency and productivity.

Wireless carriers are pursuing vertical markets much more aggressively today than they were even five years ago. True enterprise mobility is being made possible by the emergence and growth of wireless broadband.

The convergence of enterprise and mobility

The verticals being touched by mobility are as diverse as the companies that drive economic growth today. Wireless carriers are making inroads in health care, energy, automotive, finance, real estate, transit, public safety and more.

The unique trends that each of these industries face have to be addressed and resolved by wireless carriers if they have any hope of winning their business. Carriers are confronting challenges while integrating mobile services with existing infrastructure and systems already in place at many businesses and also developing tailor-made solutions for some customers that might be better served by a more complete package.

Developers, engineers and experts across all of these vertical markets are being recruited by carriers as they look to embolden their stakes in enterprise mobility and adapt to meet the special needs of these new customers.

Just as the wireless ecosystem is being stretched and redefined by the likes of Google Inc. and Apple Inc., operators are clamoring to expand their business with new revenue streams in verticals that aren’t traditionally in their wheelhouse.

If “the world is flat,” as Thomas Friedman sees it, then the cause and effect for enterprise mobility is just as great.

The New York Times columnist coined the phrase and wrote a book by that title to describe “the convergence of technology and events that allowed India, China and so many other countries to become part of the global supply chain for services and manufacturing.” This has created an explosion of wealth in the middle classes and has given these emerging powers a major stake in the success of globalization, he wrote.

The underlying theme is that convergence is happening on just about every level. Society is moving and shifting faster than ever before. One effect of convergence is causing the other. It is making a dramatic impact on business, politics and culture. Perhaps more than anything else, this convergence is defining what it’s like to be alive at the dawn of the 21st century.

The collision of business models on wireless networks

During a recent keynote at the LA Broadband Summit, Phillip Marshall, principal and chief research officer at Tola-ga Systems Inc., said every player is focusing on their interests and looking at these new challenges through their own lens.

“The challenge for the industry as a whole is that they’re all coming at it from different directions,” he said. “You have players who just think about the transaction and just look for volume.”

The end result of all these business models colliding on networks against the backdrop of challenging economics is that carriers have to rethink their long-range plans, Marshall said. Most importantly, they have to ensure they have a viable business model going forward.

“Within the value chain there’s players that have different rates at which they can create value as well as what the market expects them to do,” Marshall said.

Networks will have to create new infrastructure that reduces friction on bandwidth and capacity.

“(Carriers) need to think about distribution and ways in which they manage the transaction,” he said.

“It’s inevitable that this traffic growth is going to continue unabated,” Marshall added. “A pent-up demand for the mobile Internet is driving tremendous pressure on the networks.

The inherent physical limits

While migration to new radio technology like LTE or WiMAX is important, it won’t be enough, Marshall argued.

“The idea here is that you’re trying to squeeze more performance out of the radio waves, a scarce spectrum resource,” he continued. “There’s a very important relationship between how many cell sites you need and how much spectrum you have.”

When compared to the density of wireless networks in Europe, for example, it’s clear that much more can be done state-side to avail sites to more towers and thereby increase the carriers’ ability to earn new business in every vertical market they can possibly reach.

Because the average cell site in the United States covers 16 square miles, distributed antenna systems (DAS) are increasingly being deployed to achieve the coverage, capacity and reliability that’s required by enterprise.

“As we’re looking at the availability of resources for deploying cell sites ... we need to be thinking of that with a level of attention that reflects it’s almost as important as spectrum, Marshall said.

“There are fundamental limits on what you can squeeze out of spectrum and particularly when you deploy it over a wide area,” Marshall said. “We’re getting to that fundamental limit,” he concluded.

Sprint Nextel’s strategy

None of this comes as news to Sprint Nextel Corp.

“Our approach on verticals has evolved over the last three or four years,” said Tim Donahue, the carrier’s VP of industry relations.
While “verticals” is a nice buzz word, businesses won’t be interested “if you don’t make it tangible” with hard data in the form of case studies that present real solutions, he said.

“You’re talking them into something they haven’t done before,” Donahue noted.

To win these new business accounts, carriers have to package and explain every challenge the business faces and provide tools that can more effectively address all of their needs and concerns.

“If you make it too high level it doesn’t work for them,” he said.

Likewise, it’s not enough to just throw out general knowledge about the industry in question.

A period of rebirth and smart phones

Sprint Nextel has been transitioning and remaking itself for at least two years now. During that time, much more has changed in the mobile industry than stayed the same.

Many of the situations that the carrier faces today are not unique to any one carrier. Data traffic is surging as smart phones become increasingly popular for consumer and enterprise customers alike.

Earlier this year at the 5th Global CDMA Operation and Development Forum in Shanghai, Kevin Packingham, SVP of product and technology development at Sprint Nextel, talked about these latest trends and explained where they are playing a key role in how the business continues to remake itself today.

Smart-phone sales exceeded feature-phone sales for the very first time during the first quarter and they now comprise 34% of all sales, making it the largest device category, he said. But with that surge, traffic has followed.

“The average smart phone uses 10 times the data that the average feature phone would use,” Packingham said.

Much of the rise in traffic on Sprint Nextel’s network can be attributed to its own doing, particularly its early adoption of the unlimited data pricing model. Indeed, while other carriers move toward tiered data-pricing plans, the carrier is holding firm to its unlimited data offering as a differentiator in the U.S. market.

“Originally a lot of the U.S. service providers tried to do pricing based on usage,” Packingham said, but many customers don’t understand data usage in the same terms they do with voice minutes.

“We expect this to continue well into the next several years as we evolve the network to WiMAX and LTE,” he added.

Playing the technology field

Sprint Nextel only opened this dual path along WiMAX and LTE recently. The carrier has been a devout WiMAX follower for many years, but is now opening up to the possibility of LTE. When Packingham was asked to explain the carrier’s evolving strategy with the two technologies, he highlighted the early-to-market advantage WiMAX presented. Moreover, WiMAX was best suited for the 2.5 GHz spectrum available to Sprint Nextel for a next-generation network a couple years ago. That spectrum was configured to work with TDD-based mobile broadband technologies like WiMAX that were different from the FDD-based cellular technologies.

But now that LTE technology trials are underway and commercial launches are expected by the end of the year, Sprint Nextel wants to leverage both technologies “because we have several different spectrum bands that we operate on,” he said. “We do see them as complementary.”

Sprint Nextel could move quickly to deploy LTE using its traditional 800 MHz and 1.9 GHz spectrum holdings that currently are used for its CDMA and iDEN networks. LTE backers are also working on developing a TDD version of LTE that would allow Sprint Nextel and its WiMAX network partner Clearwire Corp. to deploy LTE technology on its 2.5 GHz spectrum.

Packingham added that Sprint Nextel is looking to partner for international LTE coverage and the technology will certainly be a part of its roadmap as follows the evolution path on CDMA.

Most importantly, he said Sprint Nextel needs network technologies that are extremely efficient and it believes WiMAX and LTE deliver in that arena.

Sprint Nextel predicts data traffic will double every year through 2014 at a compound annual growth rate of 108%, Packingham said. Smart phones and portable devices such as laptops and tablets will be the access point for 91% of all traffic by then and 66% of that traffic will be consumed by video. At a compound annual growth rate of 131%, “mobile video has the highest growth rate of any of the services,” Packingham said. Smart phones and portable devices such as laptops and tablets will be the access point for 91% of all traffic by then and 66% of that traffic will be consumed by video. At a compound annual growth rate of 131%, “mobile video has the highest growth rate of any of the services,” Packingham said. “We try to keep a very open platform and a very open mind,” Donahue later told RCR Wireless News in a phone interview. “We’re trying to be very agnostic, but we want to partner with these people to bring more value to the enterprise customer.”

Sprint Nextel is essentially trying to be 100% open architecture in every facet of its business, Donahue said.

“We think we inter-operate. ... We just try to stay away from anything that’s proprietary,” he added. “As long as we partner with app providers ... it actually makes it pretty simple.” Still, he continued, “I don’t want to oversimplify it and say it’s plug-and-play.”

Thin margins

In that vein of openness, Sprint Nextel has also shifted strategy on the applications and development front. Packingham said it’s critical for carriers to embrace an open marketplace and cooperate on a series of best practices with application providers.

Carriers like Sprint Nextel are much more willing to let application makers do the development work, he added.

This approach has required a different skill set internally, wherein employees who used to develop services specifically for customers are now relationship builders and business development managers. Incorporating services from outside has helped Sprint Nextel focus on the most relevant and popular services for business customers, he continued.

As Sprint Nextel moves out of the “isolated communications industry,” Packingham said the carrier is now asking new partners for advice on how to create a new ecosystem where they all can flourish.

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Thin margins

In that vein of openness, Sprint Nextel has also refined its vision for software-as-a-service or cloud computing, a category that’s expected to generate up to $58
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1:00 PM — Enterprise Solutions
TOUR LED BY
Mike Sapien, Principal Analyst, Enterprise, Ovum

2:00 PM — Mobile Consumer Electronics (CE)
TOUR LED BY
Jan Dawson, Chief Telecoms Analyst, Ovum

3:00 PM — Mobile Apps, Media & Content
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Jonathan Yarmis, Senior Research Fellow, Ovum

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Day One ● Wednesday, October 6

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Enterprise Mobility Boot Camp – Part II

iPad and Tablet Publishing and Entertainment Apps

MobiHealthNews.com Presents: Everywhere Healthcare

Mobile Commerce: Value over Mobile

Day Two ● Thursday, October 7

Android Bootcamp

Brighthand Mobile Film Festival

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Day Three ● Friday, October 8

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billion in revenue this year, according to Packingham.

The carrier’s view of the cloud has only improved as CDMA networks evolved to a more beneficial cost structure, he said. Even a year ago, the module pricing on CDMA was not competitive with GSM, Packingham noted. But because costs have improved, Sprint Nextel is now inviting many different verticals to pursue new opportunities on wireless networks, particularly on machine-to-machine communications.

“Intelligent routing is going to be critical,” he said. “We’re able to balance how different services use the network.”

Even Sprint Nextel will say that its biggest value proposition for enterprise today is the WiMAX-based network that partner Clearwire is deploying across the country.

“As we’re rolling out 4G, the compelling element for some of our customers is having a more dynamic video environment,” Donahue said.

The idea of 4G becomes more tangible when a business has greater bandwidth requirements, he said. Sprint Nextel can effectively eliminate capacity requirements and help businesses get past their previous capacity or wired communications constraints.

“We’ve seen the proliferation of true IP-based solutions and applications come along just as more developers get access to application programming interfaces for the latest software breakthroughs,” Donahue said.

“Today, the interfaces can be customized so much more simply than they could even two years ago.”

The margins are very low for wireless carriers within many vertical markets, said Dan Gillison, director of industry relations at Sprint Nextel. So whenever the carrier can improve ROI for a business, reduce waste and increase efficiency, it’s got a good chance of making the sale.

**AT&T Mobility’s strategy**

Chris Hill, VP of AT&T’s mobility product management unit, tells RCR Wireless News that the carrier has been working in vertical industry solutions for nearly seven years now.

“We have 14 vertical industries that we have practices against” today, he said. “What we’ve been doing is bringing in outside expertise.”

AT&T Mobility has teams of specialized engineers who are developing solutions for each of those 14 vertical markets, he continued.

On the product side, AT&T Mobility is developing vertical-specific solutions and has a growing number of consultants that will go out and meet business customers and support the carrier’s sales teams throughout the process.

“We have a whole practice of infielc customer-facing consultants,” Hill said.

Generally, the carrier has two preferred practices for delivering mobility to enterprise. It can either integrate its services with an existing installation or develop its own end-to-end solution for that specific vertical.

The development cycle and process for vertical markets at AT&T Mobility is almost as diverse as the businesses it aims to reach with its network and business-class services.

The carrier has fostered a broad developer program that is open to practically everyone willing to develop and submit their own innovative solutions, Hill said.

AT&T Mobility will also collaborate with a partner to sell side-by-side products and services that best meet an enterprise customer’s needs. Under that type of arrangement, a technology solution will typically be sold under the partner’s contract and AT&T Mobility will provide the wireless services.

Finally, AT&T Mobility increasingly finds itself developing its own set of solutions in-house. The carrier now has a portfolio of end-to-end solutions to sell, including a workforce management program.

AT&T Mobility is essentially leveraging its strengths in business-to-business and business-to-consumer to enhance wireless connectivity and capacity requirements with widely desired technologies like location-based services, fleet tracking and remote management.

**The vertical scope at AT&T Mobility**

According to Hill, AT&T Mobility now has deals with more than 3,000 business customers that have purchased mobile applications.

Today, the bulk of AT&T Mobility’s business in vertical markets is generally skewed toward the resale end of the equation. But, Hill and his colleagues are excited by the growth and new opportunities they are seeing in the end-to-end solution arena, and especially the M2M space, a category that’s on the precipice of reaching dramatic mass scale.

“We have a team of several hundred application developers” that are supporting sales staff and developing software and applications for new and existing business clients, Hill said.

Those developers and sales teams can also leverage the aforementioned solutions team and group of consultants that spend most of their time in the field.

**The AT&T Mobility pitch**

“Depending on what the client is interested in, when we start working on end the process,” Hill said.

After meeting with a new potential business customer, the carrier typically takes a couple of weeks to analyze all the ways wireless broadband can be utilized with the development of the business. Then AT&T Mobility delivers a white paper with detailed return-on-investment expectations to the potential customer at no charge. Of course, AT&T Mobility hopes to get a return on its investment by winning that customer over and closing the deal.

A variety of problems can crop up when AT&T Mobility approaches new customers in any vertical market. But the biggest problems lie in technology adoption in general. Businesses that are still employing paper-based processes and staff that isn’t necessarily tech-savvy present a learning curve that the carrier must overcome right out of the gates.

As such, the carrier is constantly consulting on technology adoption and evan-gelizing for mobile broadband by detailing all the ways it can improve the daily lives of employees and management.

These areas of concern are the type of thing AT&T Mobility will also identify and present solutions for its white papers.

And while AT&T Mobility might have its preferences when it comes to enterprise mobility, it doesn’t appear to be letting that get in the way of many opportunities. One company might have a number of existing technology vendors in place, which thereby heighten concerns about getting everything working properly together, Hill explained.

While AT&T Mobility would prefer to consult and collaborate with each partner to make sure everything works together, sometimes the scope of its work doesn’t go much further than wireless services. Because of that range of involvement, troubleshooting is another key area that AT&T Mobility is trying to figure out as it looks to resolve issues automatically rather than receiving a call about a problem when it might involve a partner.

“A lot of times we find that just because it should work together it doesn’t work together,” Hill said.

**Building a case for mobility**

While AT&T Mobility certainly has a team of expert salespeople, technology and the reach of mobile broadband in the
consumer space is teeing things up rather nicely before the pitch even begins.

“You can’t go anywhere in the enterprise where the chief information officer isn’t looking to deploy mobility and save costs in some way,” Hill said.

On the enterprise applications front, workforce management is a huge area of growth simply because the return on investment is so vast when companies deploy smart phones into the field, he added.

“These things pay for them self in a month or two. The payback is big.”

Many enterprises are also looking to take advantage of the app boom by giving employees access to their backend through a secure app customized by AT&T Mobility, Hill continued.

It often doesn’t make sense for a company to develop its own apps internally so AT&T Mobility has a platform called the Workbench Solution that can extend a company’s back-end application and give every employee access while on the go.

The end result is a client-server app that AT&T Mobility hosts and connects to the customer’s back-end system. Employees will simply gain access to a new app on their smartphone that can take them inside their company’s full system.

“The nice thing about that too is it gives the same look and feel,” Hill said. “It’s the middleware.”

Vertical markets – an overview

This special report won’t get incredibly deep into any one vertical market, but it will provide an overview of at least some of the industries where mobile broadband is coming to the fore. Future special reports on vertical markets will focus exclusively on a single industry to allow for a more in-depth review.

Kicking off a series of features and in-depth articles on vertical markets, this special report provides an overview of four major vertical markets with a focus on wireless carriers. In this report, we will provide a snapshot of the energy, finance, health care and automotive industries.

Carriers are aggressively pursuing business in each of these areas all while a group of competitors with varied backgrounds are coalescing to exploit the opportunity with just as much will and might.

In addition to in-depth special reports on the four aforementioned verticals, RCR Wireless News is also tracking developments in areas like real estate, railroads and public safety. The entire promise of mobile broadband is only as strong as it is in real-world applications. The shift from a wired to wireless world is going to be made possible (and defined) by the new businesses and economic growth that mobile broadband can deliver.

Let’s begin with an American icon, the car.

Automotive

In the automotive industry, AT&T Mobility is working with BMW Manufacturing Corp. on BMW Assist. The telematics-like system includes an integrated wireless telephone and hands-free communication with a global positioning system satellite receiver to provide safety, security and a 24/7 connection to a live response specialist.

The carrier is working with Hertz Global Holdings Inc. on a drive-time tracking solution for its global fleet of vehicles. And finally, Hill discussed a mobile application platform that AT&T Mobility has built for Volvo Trucks North America, which uses an Apple iPad to connect drivers with information directly from Volvo dealers.

Sprint Nextel is also pursuing the automotive space with a special focus on fleet management.

“We have a product you can install inside a bus that will tell you the behavior of the driver,” Donahue said, adding that the intent is to give the company a more comprehensive view of conditions on the road.

Diagnostics and telematics really gained their foothold in the auto space after location-based services took off a few years ago, he added. Sprint Nextel expects many more auto manufacturers to jump on the bandwagon shortly.

RCR Wireless News recently had the opportunity to visit the Ford Motor Co.’s product and development center in Dearborn, Mich., where it showcased some forthcoming improvements to Sync and a new MyFord Touch user interface.

Ford is playing catch up on a lot of fronts these days, but one area that it’s putting on its priority list is the shift to mobile broadband and touch-screen interfaces. Ford hopes these new products will bring its brand more in line with the demands of today’s consumers.

Mark Fields, Ford’s president of the Americas, said technology is second nature to today’s teens and young people. “They just intuitively know how this stuff works.”

He believes Sync and MyFord Touch will be another proof point that Ford is determined to stay in the lead on automotive technology and provide “more tangible evidence to consumers that Ford is changing.”

Derrick Kuzak, group VP of global product development who is also known as the “father of Explorer,” said Sync and MyFord Touch are all about connectivity and control, which combine to “keep hands on the wheel and eyes on the road.”

The first generation of Sync was introduced on the Ford Focus in 2007, but Ford is aggressively rolling the technology out across its fleet. Moreover, Ford plans to have its new MyFord Touch interface installed on at least 80% of all of its vehicles by 2015.

The new generation of Sync, which uses voice-recognition technology from Nuance Communications Inc., can now recognize up to 10,000 voice commands and uses more flattened grammar to allow drivers to talk in more complete sentences. The goal is to make nearly every function in the car voice-activated.

“Drivers can now control most
dashboard functions with voice,” said John Schneider, chief engineer for multimedia and infotainment at Ford.

Driver-connect technology is not a new trend and it’s “been guiding development here at Ford for years,” he added.

Whereas Sync is the software that runs at the heart of the system, MyFord Touch is the entire user interface, which includes everything from touchscreen LCDs to controllers and a new media hub. MyFord Touch boasts an 8-inch LCD touchscreen and replaces traditional knobs with touch sensors.

“We’ve been trying to keep up with the consumer and especially their relationship with electronic devices,” he said, calling MyFord Touch “a dashboard for the 21st century.”

Seamless connectivity, customization, cloud computing, touch and voice interfaces, and personalization are all part of what Ford is trying to deliver with Sync and MyFord Touch.

“The most dangerous proposition for drivers are actions or distractions that take their eyes off the road,” Schneider said.

As such, Ford has identified “four corners” that drivers can now control with more ease and less distraction: phone, navigation, entertainment and climate.

Finally, Ford will also enable drivers to create a mobile Wi-Fi hotspot by plugging a USB modem into the USB port in the MyFord Touch media hub. In essence, the vehicle will be equipped with Wi-Fi, but connectivity will have to be sourced from a USB dongle.

Jim Farley, group VP of global marketing and Canada, Mexico and South America operations at Ford, said more than 6 million Explorers have been sold and 4 million are in operation in the United States today.

“Democratizing technology” is the new “Ford brand promise,” he said. “There’s a lot of great examples in the Explorer of us democratizing technology.”

Health care

There is perhaps no other industry that will achieve results as dramatic as those coming to health care thanks to ubiquitous mobile broadband.

With costs continually spiraling out of control, Sprint Nextel’s Donahue said, “the best opportunity is to take cost out of the health care system.” Equipping doctors and health practitioners with remote functionality to address, diagnose and treat patients with chronic care needs is one clear path to achieve that.

“These people do not need to come into the hospital,” Donahue said.

“To the extent that we can make this easy,” he said, “we’ll take cost out of the system. It’s better for the patient.”

Practically everyone in the health care ecosystem would like to see changes made to the reimbursement model the industry relies on today and Sprint Nextel wants to help drive those changes, he said.

“We do this today,” he said. “The feedback is they love using wireless” and prefer it because it’s ubiquitous.

Donahue said Sprint has a few major partners in the space that are building and demonstrating new two-way video services that will improve remote care and hopefully lead to its expanded use.

The return on investment for home-based services is phenomenal, particularly when experts are equipped with new functionality on smart phones and other mobile devices, Donahue continued.

He also highlighted some work that Sprint Nextel is doing with Calgary Scientific Inc. Whereas most physicians today have to rely on a $150,000 machine to view a 3-D rendering of a brain or abdominal cavity, new software can now implement this technology right on a smart phone.

“This is where I think you’ll see this evolution,” Donahue concluded.

Over at AT&T Mobility, Hill says the carrier is also pursuing a variety of industry solutions that, coupled with smart phones, could better manage diseases and other problems that require long-term care.

The mobile health care space consistently sees a steady flow of deals and new arrangements that are driving the convergence of mobility and health care on a variety of levels.

General Electric Co. and Intel Corp. recently formed a joint venture to create a new health care company focused on tele-health and independent living.

Less than two weeks before that, Health Partners, a nonprofit health care organization with 1.3 million subscribers, signed a deal to license the MobileSecure Health platform from Diversinet Corp., a firm that provides secure mobile applications for the industry.

Mobility is also converging with health care in the education space.

First-year students in the school of medicine at the University of California at Irvine recently received iPads during their orientation, which were preloaded with course outlines, notes and textbooks. The program was the first in the nation to equip their medical students with the mobile device.

In a statement announcing the news, the school’s dean, Ralph Clayman said, “the physician’s ‘black bag’ of the 21st century eventually won’t contain the standard stethoscope, tuning fork and reflex hammer, but rather new generations of digital tools that allow students to enter a realm of routine examinations heretofore unimaginable.”

While iPads aren’t cheap, the school and its students could certainly save money when the cost is compared to the typical expense associated with textbooks. There’s also an obvious ecological benefit to getting more students and universities to embrace mobile.

Finance

The finance vertical is another area ripe for the mobile taking, but it also presents a set of unique security concerns that slow both development and adoption.

Sprint Nextel’s Donahue said mobile banking is “still pretty premature in the United States,” but the carrier is seeing more financial institutions looking to leverage
mobi

ity to extend their services to customers on the go. The bulk of Sprint Nextel’s work in the space today is related to wireless ATM machines and other vending environments that would be a perfect match for wireless connectivity.

AT&T Mobility, for its part, recently launched a pair of services with Apriva to let customers turn their mobile device into portable credit-card terminals. The AprivaPAY and software can be tied to a merchant account and enable a mobile workforce to process credit or debit card payments from the field. Start-ups like Square Inc. are also entering the space by leveraging Apple’s iOS and Google’s Android operating system to process credit transactions in the field as well. AprivaPay costs $15 per month whereas Square carries no monthly costs, doesn’t require a merchant account and only charges a 1.9 percent-transaction rate of 2.75% plus 15 cents, which is below the industry standard.

Payfone, another mobile payments start-up, recently secured $11 million in a second round of investing to build and grow its platform, which works on the backbone of a carrier’s network to deliver payment and billing services.

“Mobile payments today are plagued by fraud and failure,” Payfone CEO Rodger Desai said in a statement following the latest round. “Payfone was built from the ground up with carrier-grade network technologies that enable highly scalable and reliable one-click mobile billing, and new, never before used factors of authentication.”

On a much grander scale, three of the nation’s largest wireless carriers are working on a joint venture that should give mobile banking and contactless forms of payment a major boost.

According to Bloomberg, AT&T Mobility, Verizon Wireless and T-Mobile USA are all working on a smartphone payment system using near field communications (NFC) that would displace credit and debit cards.

While the new service would reportedly keep Visa Inc., MasterCard Inc. and American Express Co. out of the mix, Discover Financial Services would be the payments network that processes all of the transactions. Barclays plc is lined up to manage the accounts, according to Bloomberg, which cited three anonymous sources for the story.

There were no other details about the business model for the new system, how merchants would be charged for transactions and when the trial might begin at stores in Atlanta and three other U.S. cities. According to one analyst, merchant readers would cost about $200 each and the chipset required for mobile payment would increase handset manufacturing costs by at least $10.

While the carriers might be incredibly strong and adept at recurring billing, there’s no chance MasterCard and Visa are going to sit quietly, especially not when they controlled a combined 82% of U.S. consumer spending on general-purpose cards last year.

In June, Citigroup Inc. introduced MasterCard PayPass stickers that, when affixed to a mobile device, could process payments at the 230,000 merchants that already support MasterCard’s solution. And Visa is working with DeviceFidelity Inc. on a technology that will transform phones into mobile payment devices that can store multiple accounts.

Banking and finance is roundly accepted as a sure win for the mobile environment – the reasons for growth and global acceptance are impossible to ignore. The industry has spent more than a decade encouraging its customers to move from physical to virtual-based service in the online world for at least some of those reasons. But every security misstep the banking industry makes on mobile could push the public’s willingness to accept mobile banking back even further.

Take for example when Citigroup recently publicly disclosed a security flaw in its iPhone banking app. While the disclosure is clearly the right move, it also shines a light on some weaknesses in mobile banking that might not bode well for the industry in at least the near term.

While Citibank deserves kudos for publicly addressing and resolving the security glitch, there are still a few unanswered questions. Why are mobile apps “accidentally saving” personal information in a “hidden file” on smart phones? Are developers to blame for security flaws that can happen as a result? Why aren’t users asked to approve the storing of personal information on a device?

Until some of these fundamental questions are answered and corrected, it’s easy to see why so many banking customers will be holding tight to their ATM cards and the old, secure way of doing things.

Energy

One of the biggest areas of growth for wireless carriers is happening in the M2M space and particularly as it relates to smart-grid technology and the use of mobile connectivity to control utilities, thereby saving energy and reducing cost.

Sprint Nextel and AT&T Mobility are both seeing traction in the energy space around telemetry, especially with public utilities like electricity, water and gas.

British Gas recently updated its meter-reading application to make it easier for customers to keep track of their energy bills, monitor use and even submit meter readings to get accurate bills. About 100,000 of the company’s customers have downloaded the app since November when British Gas became the first energy company in the United Kingdom to offer an iPhone app.

In nearby Holland, KPN is using CDMA450 technology, which is mostly used to cover vast rural areas in developing countries, to pursue the M2M space. With a mobile voice market close to saturation in the Netherlands, many operators like KPN are searching for new sources of revenue.

And in that regard, it all comes down to...
identifying what else people are carrying in their pockets, Gerard van der Hoeven, the carrier’s strategic business developer, said at a recent industry event in Shanghai.

“There is a big dilemma in this M2M area” because it’s all about low bit rates and low speeds, he said. On average, machines connected to the network will use less than half a megabit of data per month, he added.

There is an inherent Catch-22 with M2M — long lifetimes and very low numbers, van der Hoeven said.

But “in the end it’s high margins,” he added, pegging the average revenue per user at about $6.35.

When asked if the margins are better than voice, van der Hoeven said, “When you look at the customer lifetime ... it’s good business.”

KPN got its foot into the M2M space with a pair of Dutch utility companies that control 70% of the market. CDMA450 became the logical network step based on the heavy demands that utility companies were making, he said.

The utilities wanted guaranteed service for at least 15 years, high security, high availability and deep indoor coverage to reach customer’s metering closets, which are often placed in the center of the home throughout Holland.

KPN setup an entirely new network on CDMA450 exclusively for M2M and smart metering, van der Hoeven said. So far the carrier has deployed 50 base stations, mostly at existing cell sites, that cover around 15% of the country and it’s also built a metering solution and data center.

CDMA450 is “a lot safer and it won’t harm your existing customers,” he said, adding that smart metering and smart-grid applications are best suited for this type of network. “This is a really good alternative.”

KPN plans to focus on the utilities through the remainder of 2010 and then hopes to expand its M2M business on a much larger scale.

“There still is not so much focus on M2M and M2M hardware, but a lot of suppliers are working to get that moving,” he concluded.

Mobile broadband is also making its presence known outside the utilities market, but in other fields of energy. Research firm Mobile Experts L.L.C. recently penned a report that said the return on investment for mobile base stations in solar panels and wind turbines will soon achieve payback within six months of being installed.

“The changes in ROI expectations will create a tectonic shift in the industry, shifting over 150,000 base station sites from diesel generators to alternative energy sources over the next 10 years,” wrote Joe Madden, principal analyst at the firm.

Not surprisingly, wireless broadband is also being sought out in the Gulf Coast amid clean-up efforts related to BP plc’s Deepwater Horizon spill off the coast of Louisiana.

ERF Wireless Inc., for example, recently struck a deal with BP to provide wireless services on Galveston Island, Texas. The installation will provide mobile bandwidth to the U.S. Coast Guard’s Incident Command Center, which was recently set up on the island, and aid crews as they search for and respond to reports of oil affecting the Texas Gulf Coast.

“As a Texas-based company with a high-capacity communications network already serving Galveston Island and the upper Texas coast, it was possible for ERF Wireless to quickly respond to the communication needs of the U.S. Coast Guard’s Incident Command Center,” H. Dean Cubley, CEO of ERF Wireless, said in a prepared statement. “In addition, with so many of our customers and company personnel located along the Texas Gulf Coast, we have a special interest in supporting the clean-up efforts and research that the Coast Guard is coordinating. The high-speed connectivity we’re providing the command center should help in the transmission of the data being collected and we sincerely believe our technology will contribute to speeding up the process of the Gulf Coast’s protection and restoration from the BP Deepwater Horizon spill.”

The company is also applying for grants from the federal government’s broadband stimulus fund to do more work in the field.

T-Mobile USA recently announced a deal with Broadpoint Inc. to bolster its voice and messaging services in the Gulf of Mexico to improve the network’s reliability in the area as well. At the time of the announcement, the carrier pointed out that nowhere is constant communication more critical than remote areas like the gulf where worker safety, productivity and business flow rely on unabated connectivity.

To be sure, there is a growing league of companies that are targeting the oil and gas vertical. High-speed mobility is a recurring theme in nearly every communications project that touches on the space today, but it’s not being left exclusively to wireless carriers.

Vecima Networks Inc., a company based in Victoria, Canada, has a varied background in radio frequency that it is now leveraging in the mobile arena in private enterprise-class network deployments in oilfields.

The vast majority of the company’s existing business is in Canada, but the company has a series of trials underway in Mexico and the Middle East and plans to expand to more internationals soon.

“More and more people have noticed there’s definitely opportunity in this vertical,” Robert Forget, the company’s director of wireless product management, told RCR Wireless News.

In a nutshell, Vecima “eliminates the need for a cellular network,” he said. “There is absolutely no lack of capital for this vertical. All of these folks have cash to pay so they pay cash. That is not an issue at all.”