Device-to-Car Connectivity
Still a Jumble

To many of the world’s 1.4 billion users, smartphones have become indispensable. People wouldn’t think of leaving the house without their device. But when they get behind the wheel, many of the applications they’ve grown accustomed to on their smartphone are either difficult or downright dangerous to use while driving.

Carmakers would love to be able to offer vehicles that safely and harmoniously marry any smartphone to any of their vehicles to take full advantage of the vehicle’s displays, audio system, microphone and driver interfaces. And while certain smartphones can be made to link to certain cars, those connections are often superficial and don’t always work when new versions of the phone come out. A multitude of protocols that would pair smartphones with the vehicle’s head unit have been offered but none of them yet seem destined for broad adoption.

“It’s a classic gold rush kind of scenario,” said Sachin Lawande, executive vice president of Harman International and president of the Infotainment division, “Everybody jumps in with their own solution. Why? Because fundamentally it is not very difficult to do. Bluetooth Serial Port Protocol emulates a serial port. You can construct a protocol on top of SPP that allows applications on the head unit to make certain function calls into the phone. It works as a gateway to the net or talks to applications on the phone.”

Without a clear cut standard, said GM’s Matt Schroeder, executive director of infotainment and OnStar engineering, carmakers are more or less compelled to offer all the protocols, not only Apple’s and Google’s, when they spec a new head unit.

“That is the direction manufacturers, in including GM, will be forced to consider,” he said. “You either have to segment your market and not offer all the solutions, or you offer all the possible solutions to a broader customer base.”

Harman to Offer New Head-Unit Platform Featuring HTML 5 App Development Environment

According to Harman’s Sachin Lawande, executive vice president of Harman International and president of the Infotainment division, the reason Android and iOS phones are so popular is because of the huge selection of appealing applications that can run on them. Google and Apple provided application environments and software development kits that made it easy for developers to write apps.

With that in mind Harman has been busy creating an automotive infotainment application platform that it hopes will make life easy for independent software vendors. “No OEM on its own can deliver all the functionality that consumers want. Apple couldn’t do it alone, nor could Google.” Harman’s new environment will be based on HTML 5, a widely used markup language increasingly popular with Web developers.

The new platform will include an application framework capable of full lifecycle management of apps. An SDK will be open to third party developers so they can write code. Harman will pay for the platform’s development through licenses to carmakers and other tier-one suppliers.

Mr. Lawande suggested that “iOS for the car won’t soon be ready for prime time.” The problem is that the computational horsepower required to encode a virtual display and send it to the car’s display where it must be decoded and rendered is too great. That will limit how rich and responsive the car’s display can be compared to maps from navigation software run from the head unit.

Harman’s new platform will offer both software upgradeability and hardware that can be upgraded at the dealer by plugging in a new computer module into the mother board. “The typical car has a gestation period of three years and a lifetime up to seven years. Your smartphone will have ten

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Carmakers Connect with Apps

J.D. Power and Associates’ 2013 Emerging Technologies study found that 82% of vehicle owners with smartphones were interested in purchasing an in-vehicle device-application link to connect their smartphones to their infotainment system. Two-thirds of vehicle owners are also smartphone owners. According to Nielsen data, in August 2013, the top ten route and travel planning apps were used by 110 million Americans. Google Maps is unquestionably the most widely used travel-related app.

Pandora Media, still the Internet radio market leader, says one-third of all new cars sold in the United States in 2013 will have Pandora installed. It claims more than 2.5 million unique activations through integrated applications in 23 automotive brands, covering 100 models, plus eight aftermarket manufacturers. But Pandora is facing serious competition from apps such as Spotify, Aha Radio, iHeartRadio, Stitcher and recently Sirius XM Internet Radio and iTunes Radio. Nissan North America announced it will be the first carmaker to launch iTunes Radio in a vehicle, on the 2014 Rogue, Versa Note and Leaf.

The pervasive addiction people have to their smartphones is fueling a demand for in-vehicle access to more phone apps that can be used by the driver, without creating too much distraction. Several carmakers are pursuing the value proposition offered by creating or controlling apps that can access vehicle data to provide convenience and safety features for consumers who are willing to pay subscription fees. This brand-specific approach also helps maintain and strengthen an OEM’s relationships with customers after the vehicle sale.

BMW chose to offer limited functionality iPhone versions of Facebook and Twitter in its BMW Connected apps suite, available on models that have the corresponding software installed in the infotainment system. New posts and tweets can be read to the driver, and he can post from a selection of canned responses. With the software embedded in the vehicle, these responses can be personalized using data available from ECUs in the car. BMW’s Doug Claus, head of product requirements, development and ConnectedDrive, in an interview with Telematics Update, gave the examples of posting your arrival time and destination, determined by the navigation system, or sharing which music track you were listening to.

BMW Connected was designed so that the iPhone locks when it is docked in the snap-in connector, and control is handed off to the iDrive controller. The difficult challenge carmakers face in trying to keep up with rapidly changing consumer electronics was brought home to BMW again just last month. The new iOS 7 for iPhones created a glitch that disables switching between apps with iDrive. When Apple changed the connector on the iPhone 5 last year, BMW’s snap-in docks for the phone no longer worked.

Ford’s AppLink feature, available on nine out of 15 Ford models in the U.S., allows drivers to use certain Apple, Android and Blackberry apps on Sync, using Sync’s voice controls. The list of Sync-compatible apps includes popular navigation, location-sharing, music and news streaming and Aha Radio. At the 2013 Consumer Electronics Show, Ford announced it was opening up AppLink to outside developers. In June, Ford released the latest version, AppLink 2.0, which provides developers with access to vehicle sensor data and allows greater communication between apps and vehicles. Ford also expanded AppLink availability in Europe, and now supports six languages.

This year Ford also released its OpenXC SDK for Android developers. OpenXC gives app developers access via the CAN bus to vehicle sensor data such as speed, steering angle, fuel consumption and GPS position. Not only can such apps—if approved by Ford—aid the driver, but the sensor data collected could be aggregated and used by Ford or third parties for other purposes.

Code Systems Inc., a subsidiary of Voxx International, will supply Ford with a dealer-installed version of its remote start and keyless entry hardware along with a smartphone app. With the Remote Access app consumers can lock and unlock select Ford and Lincoln vehicles, start them remotely or find them in a parking garage by flashing the lights and honking the horn. Ford will charge consumers a $49.99 annual fee for the service.

GM’s OnStar RemoteLink app, introduced this year, provides access to some GM vehicles remotely from the user’s phone. The full suite of features includes remote lock/unlock, start, horn and light activation, checking tire pressure, fuel level and oil life, contacting OnStar or a dealer, managing OnStar calling plan minutes, and sending directions to the car from addresses in the phone’s contacts list.

An active OnStar Directions & Connections ($299 per year) or Safe & Sound ($199 per year) service plan is required to use the full suite of RemoteLink features. But buyers of eligible 2014 OnStar-equipped GM vehicles can download the RemoteLink app without a paid subscription to OnStar and use some of the basic features for a five-year period at no cost.

Turn to Apps, page 8

Apps for Cars
- Navigation
- Music streaming
- Diagnostics
- Remote lock/unlock, start, climate control
- Local services—for example restaurants, cheapest gas, charging stations
- Traffic
- Parking availability
- Social media
- Usage-based insurance (UBI)
New Technology Rollouts Move Slowly

One of the things that investors like about automotive electronics companies is that change in the industry happens very slowly. Investors can see most disruptions that would alter their stock valuations coming years in advance, which gives them plenty of time to unload an investment. That is particularly true for disruptions caused by new technology.

According to a U.S. Department of Energy study, the interval between the initial market introduction of a new technology and when the technology saturates the light-duty vehicle fleet takes longer than one might think—anywhere from 26 to 40 years or longer. The fascinating study, Vehicle Technology Deployment Pathways: an Examination of Timing and Investment Constraints, was published in March 2013.

Once commercialization goals are met in the lab, it takes three to eight years just to reach low volume production, usually in a limited-production, high-end vehicle. From there it takes another three to five years to find application in a mass market car model, assuming there are no major problems and the mass market is ready for it. It takes another six to 12 years for the technology to work its way through each carmaker’s new vehicle line up. Another 14 to 16 years are required for the new technology to saturate the U.S. stock of cars on the road as older cars lacking the technology are replaced.

Hybrids Slow to Penetrate Market

According to the Department of Energy study, hybrid vehicle technology has been especially slow to find market penetration in the U.S.:

- The Honda Insight hybrid was introduced in the United States in 1999 and the Toyota Prius in 2000 (it was first introduced in Japan in 1997), but more than 10 years later, the sales share for hybrid vehicles in the U.S. is less than 3%. ... At recent incremental prices for hybrid drivetrains and current gasoline prices, hybrids appeal primarily to early adopters and possibly to a subset of drivers who drive greater-than-average annual miles in largely urban (or suburban) stop-and-go conditions where hybrids provide maximum benefits.

Hybrid technology won’t move into the mass market until it appeals to mainstream buyers.

Berylls Strategy Advisors on Auto Electronics Industry Future

The Munich-based management consultancy sees the industry growing at 5.5% per year through 2025, to €430 billion. Growth will be driven primarily by vehicle electrification even though Berylls expects EVs to account for just 3% of vehicles sold.

Auto Electronics Market by Domain

Total E/E Value Add 2012: €214 Billion

- Comfort & body, 25.1%
- Cable & electric, 11.1%
- Chassis, 7.4%
- Powertrain, 2.5%
- Engine, 13.5%
- Infotainment/Connectivity, 12.1%
- Safety, 4.4%
- Alternative drive systems, 3.5%
- Other, 20.5%

Source: Berylls Strategy Advisors

The future will see further concentration in automotive electronics, but the industry will also see further fragmentation because of the growing number of new players.
Background
Founded in 1999 Telenav was an early provider of location based services, including voice guided GPS navigation, primarily through wireless carriers AT&T and Sprint Nextel. Its first real-time mobile navigation product, TeleNav Navigator, launched on Nextel Motorola phones in 2003. Since its IPO in 2010 the company has been traded as TNAV on the NASDAQ. Headquartered in Sunnyvale, California, Telenav also operates in Shanghai and Xi’an, China, and maintains small offices in Detroit, Seattle, Los Angeles and Boston. Telenav holds 27 U.S. patents and 42 foreign patents expiring between April 2020 and December 2031. In addition, the company has 112 U.S. and 78 foreign patent applications pending.

Sales have been growing at the rate of 17% per year during the past four years. Automotive revenue reached $71.5 million in the fiscal year ending June 30, 2013, which was 37% of total revenue. In fiscal 2014, the company expects automotive to account for 45% to 50% of total revenue.

Automotive
Telenav entered the automotive navigation business in fiscal 2008, working initially with Ford. Telenav’s first off-board product—delivered via the mobile phone but using the car’s display and audio systems—was launched in some model year 2010 Ford Sync-equipped vehicles in North America.

In calendar year 2011 Telenav embedded navigation software was offered in MyFord Touch and MyLincoln Touch vehicles, in both North and South America. By 2012 Telenav navigation was available in 14 Ford and Lincoln models. In 2013 Telenav software was launched in Ford and Lincoln models for sale in China. Next year, Ford and Lincoln will offer Telenav software in their remaining models.

In 2012, Delphi navigation products with Telenav software were launched in three GM models. GM will expand its Telenav-based software offerings to an additional 18 countries.

The Ford and GM business boosted Telenav’s automotive revenues by more than 140% from calendar year 2011 to 2012. Automotive revenue from royalties is expected to grow from $52 million in FY 2013 to $69 million in FY 2014, a 33% jump. Other auto revenues, largely from payments for nonrecurring engineering, amounted to $19 million in FY 2013 but will be zero in FY 2014. NRE billings are expected to grow in later years as the company takes on new projects already in the pipeline. In the coming months Telenav will be announcing those new projects and partners.

Telenav has targeted its automotive segment along with its advertising and premium services segments for strategic growth, meaning they warrant outsized investments at the expense of its mobile navigation segment. The company expects its strategic growth segments to account for 60% of sales in FY 2014.
"The reason automotive is strategic for us is that cars are finally becoming connected," said Hassan Wahla, co-general manager of the automotive business and vice president of global business development at Telenav. "The OEMs are looking for companies that understand both the embedded space and the cloud-based navigation space. I don’t see anybody else in the industry like us. We have the cloud-based heritage as well as experience working directly with automotive customers on embedded solutions."

Telenav’s automotive business is run as a profit and loss center under the direction of Mr. Wahla and Salman Dhanani, the other co-general manager. Mr. Dhanani, one of the founders of Telenav, is also vice president of strategic partnerships.

With navigation penetrating just 20% to 40% of new vehicle production in North America, Telenav sees an automotive navigation market that can only grow. Telenav offers solutions for both the built-in part of the market, where the navigation application runs on the head unit, and the brought-in part of the market, where the navigation application runs on a smartphone linked to the vehicle and is displayed on the head unit. According to the company, Telenav’s Scout application can be connected to the head unit via any protocol the OEM chooses such as AppLink or MirrorLink. Citing numbers from Strategy Analytics, Telenav expects the market for built-in navigation to grow at 20% per year. With the brought-in market just beginning, it will grow much more quickly, at about 200% per year.

Thus far, Telenav has been focused on developing automotive business in North America and China, the world’s two largest automotive markets. Over the next 12 months, the company will be expanding its focus to include Europe. It will present its newly released European navigation product at the Telematics Munich conference sponsored by Telematics Update, November 11-12, 2013.

"The German OEMs have a strong presence in China and the U.S., so we have been talking to them through our channels there," noted Mr. Wahla. "But now that we have a product for Europe, we will engage them directly at their European headquarters."

Automotive Solutions
According to Telenav, consumers are dissatisfied when they compare car navigation systems with the navigation solutions running on their smartphones. “Smartphones have set a high bar; they’ve increased consumer expectations,” pointed out Mr. Wahla. "The car has a bigger display, yet consumers are frustrated because they can’t do the same things on their car system that they can do on the mobile system. When they drive their car off the lot, chances are the maps are already at least a year old. Their smartphone has better data even though they paid a lot more money for the in-car navigation system."

That’s where Telenav can help, according to Mr. Wahla. "Our heritage is navigation on mobile phones. We had cloud-based navigation before there was a thing called the cloud." Telenav wants to help carmakers make in-car navigation better and safer. “We can help them leverage what’s in the cloud, whether it’s through an embedded modem or the driver’s smartphone, so they are able to get fresh POIs, the freshest traffic data, the latest maps.”

continued on following page
Telenav Inc.

There are three main components to the automotive solutions offered by Telenav. The first is content including maps, POIs, traffic data, speed traps, weather and restaurant reviews. Telenav buys content from third parties, though it does offer its own traffic-probe data. The second part of the solution is the navigation software itself. The software can reside on the phone or in the vehicle’s head unit. Third is cloud-based services. Telenav builds the navigation software and cloud-based services in-house.

Telenav uses TomTom maps for its phone applications. It uses TomTom for some automotive applications as well, though it has mostly been using HERE North America, from Nokia. Nokia’s HERE map business was formerly Navteq, which Nokia acquired in 2007. TomTom got maps when it acquired Tele Atlas in 2008.

Telenav is an active participant in OpenStreetMap (OSM), a collaborative project founded in 2004 to create and maintain a crowd-sourced map of the world. Using GPS data from its user base, Telenav provides OSM with updates on a regular basis and plans to launch OSM as the primary navigation source in its Scout for Browsers HTML 5-based navigation product, the first U.S. company to use OSM. The founder of OSM, Steve Coast, was recently hired by Telenav “to lead its crowd-sourced mapping initiatives for Scout GPS navigation services,” according to a Telenav press release.

Telenav believes that its ability to support multiple content providers is a strategic advantage. “If in a certain region we find that one map provider is better than another, we can give the OEM the option to use that supplier,” said Mr. Wahla. “For example, in India we launched a product with maps from MapmyIndia because we found their maps to be of high quality. We bring best-of-breed solutions to the OEMs. We can help them pick the best map supplier, the best traffic supplier, the best POI supplier and put it all together.”

Major Customers

* Ford

By far its largest automotive customer, Ford accounted for 87% of Telenav’s $21.7 million fourth-quarter 2013 automotive revenues. General Motors, via Delphi, accounted for almost all of the remainder.

Telenav’s navigation solution is offered on 15 of 20 North American Ford/Lincoln models, and will roll out in the remaining five models by the end of FY 2014. In FY 2015, the solution will launch in Europe.

Telenav participates in three major programs with Ford: Sync Services, MyFord Touch and AppLink. For Ford Sync vehicles with the Traffic, Directions and Information (TDI) feature, Telenav provides cloud-based navigation services, so far only for the U.S. market. When the driver asks for Sync Services, which is Ford’s own service delivery network, he gets connected to Microsoft’s Tellme voice portal. There, if he asks for navigation he gets connected to Telenav’s servers, which deliver the route to the vehicle via the driver’s phone.

For MyFord Touch and MyLincoln Touch vehicles, navigation content and software from Telenav is embedded in the vehicle’s head unit via a SIM card that can be purchased with the vehicle or later. From facilities in the U.S. and China, Telenav supports the MyFord Touch and MyLincoln Touch programs globally.

Telenav has also begun offering its Scout for Cars with AppLink product. Scout for Cars is the company’s navigation engine that runs on smartphones. Ford’s AppLink links the smartphone to Ford vehicles so customers can take advantage of the vehicle’s audio system and control their apps by voice. Scout for Cars provides audible turn-by-turn directions as well as two-line text directions that appear on the vehicle’s radio display.

“Right now the biggest limitation is that vehicles with Ford AppLink have radios with just a two-line display,” said Mr. Wahla. “Over time we see that changing and think adoption will start to take off significantly for these types of brought-in solutions once there is integration with vehicles that have graphical displays. Then the take rates will be much more significant.”

* Delphi

Telenav won an order in October 2011 from Delphi to supply navigation software, content and cloud services for an embedded infotainment system Delphi supplies to General Motors. The Delphi system, including the Telenav solution, has been available in the 2013 model year Buick Enclave, Chevy Traverse and GMC Acadia. Those vehicles reached GM dealer showrooms in November 2012. In FY 2014 GM is expected to roll out the Delphi system with Telenav navigation to an additional 18 countries.

Telenav’s strategic partnership with Delphi has also led to business with a Chinese carmaker who will market the vehicle in China and in Russia.
goes in the black box,” he said. “They do want to have a strong say in what systems integrators or tier ones themselves, while some carmakers may not want to just rely on the old way of doing business. Getting wider. “The OEs realize they can’t get everything they want, and they’re looking for the best of breed. They’ve already spent money and resources on developing their own in-house solutions. They’re open to working with tier ones, one of the things we are very good at is being able to support the OEM directly.”

**Ability to Accommodate Multiple Operating Systems**

Telenav sees Google and Apple as its two biggest competitors, and while they are much bigger companies, Telenav believes it has an advantage when it comes to navigation solutions. Mr. Wahla explained: “Anybody doing business with them soon realizes that they are going to be focused on giving you things that revolve around their operating systems. If you want to make a bet that everyone is going to be on iOS or everyone is going to be on Android five years from now, then it is great to work with one of these OS suppliers directly. But if you think, hey, maybe Windows 8 will make a comeback, or maybe somebody will buy Blackberry and there could still be multiple operating systems, and you want to offer your customers a solution that works well across all of them, then you should work with us.”

The company has the same value proposition on the mobile side, which it believes is why AT&T chose to work with Telenav. “We were able to develop AT&T Navigator, which works on more than half a dozen operating systems, including Java, Brew and even the old Palm OS,” said Mr. Wahla. “As smartphones are emerging, the two clear leaders are Android and iOS, but major OEMs like Samsung are developing their own operating systems, and who knows what will happen five years from now. The most prevalent operating systems inside the vehicle today aren’t Android and iOS. They’re Linux and QNX, and of course we support them. We give OEMs the option of working with multiple operating systems, on different head units, across different car lines. Google and Apple can’t do that.”

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**Telenav’s Competitors**

- Apple
- Bosch
- Garmin
- Google
- Microsoft
- Nav N Go
- TomTom
- TCS (Tata Consultancy Services)

**Distinctions Claimed by Telenav**

- World’s first to offer GPS navigation on a mobile device in 2003
- “Best Navigation Solution,” Telematics Detroit 2012
- World’s first HTML 5 mobile voice-guided GPS
- Best in class HMI, according to OEM feedback

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**Telenav’s Strengths**

- **Wireless Carrier Expertise**
  According to Telenav, the biggest thing that sets it apart from other navigation software providers is its extensive experience providing personalized navigation service for its main wireless carrier partners, AT&T and Sprint. AT&T accounted for 24% of Telenav sales in FY 2013, Sprint accounted for 14%. Telenav is the exclusive provider of AT&T’s white label navigation service. Telenav and Sprint have been partners for nearly ten years. “We are experts in wireless. We were the first to launch cloud-based mobile navigation, back in 2003. That puts us in a good position to work both through our wireless channels and through our OEM automotive channels to deliver the best navigation solution in the industry. We have been waiting a long time for this convergence of wireless and automotive to happen,” said Mr. Wahla.

- **No Debt**
  With no debt as of March 31, 2013, Telenav’s balance sheet is strong. “We have a lot of cash so we are looking at strategic acquisitions,” noted Mr. Wahla. “We have already acquired a location-based ad company [ThinkNear, in Los Angeles, California] and a content company [Goby, in Boston, Massachusetts]. We continue to look at businesses that can help us with content, cloud services or software.”

- **Experience with OEMs**
  Telenav cites its direct partnerships over the years with AT&T and Sprint and its experience working on behalf of device-makers Blackberry and HTC as examples of this capability.

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**Systems Integration by the Carmaker**

Rather than defer entirely to a tier-one supplier, Ford brought Sync development in house. Mr. Wahla observed: “The old way of doing business was the OEMs would buy a black box and everything would be in there—radio, navigation and the other features. The only thing the carmaker cared about was the end product. Ford changed things quite a bit.” Ford’s strategy provided the opportunity for Telenav to deal directly with the OEM. According to Mr. Wahla, “Ford realized there are suppliers that are really good at making platforms, companies that are good at hardware and others that are good at software and services. There isn’t necessarily one that can do everything well, so Ford picked its own partners. They selected Telenav as best of breed for navigation software and services. They selected Nuance for speech. They worked with Microsoft on the platform side and for hardware they came up with their own spec that was taken to Flextronics.”

Telenav is seeing a similar trend with other carmakers. The main reason for this, Mr. Wahla noted, is that the gap between consumer electronics and automotive is getting wider. “The OEs realize they can’t just rely on the old way of doing business. While some carmakers may not want to be systems integrators or tier ones themselves, they do want to have a strong say in what goes in the black box,” he said.
The auto industry has too many different device-to-vehicle platforms,” said Doug VanDagens, global director of Connected Services at Ford. “The developers are saying they can’t develop on all these platforms. They would very much appreciate a high-volume platform or two to reduce their complexity. We certainly would like to see SmartDeviceLink become that high-volume platform.” Thus far no other carmaker besides Ford has indicated that it will adopt SmartDeviceLink. To further its bid to create an industry standard for smartphone-to-vehicle communications, this past September, Ford acquired Livio, a software development startup located in Ferndale, Michigan. “What Livio can now do, along with Ford and others, is make suggestions on how to make the SmartDeviceLink code better, how to improve its robustness and how to get more progressive features quickly into the market,” said Mr. VanDagens. A wholly owned subsidiary of Ford, Livio reports to Graydon Reitz, global director of electrical and electronic systems engineering at Ford. According to reports, Ford spent less than $10 million for Livio.

More Options: Bosch, Tweddle Group

At the Frankfurt Auto Show this past September, Bosch SofTec GmbH announced that its mySPIN smartphone integration platform will be used across carlines by Jaguar Land Rover starting in 2014. The platform is compatible with Android and Apple devices. JLR customers can download appropriate applications from the Apple App Store or Google Play store.

“While the Daimlers and BMWs rework smartphone apps to fit their own branding and HMI, our solution is especially well suited to people who live with their smartphones 24/7,” explained Kay Herget, head of marketing and product management at Bosch SofTec. “While other carmakers force app users to use the hard keys on their infotainment system, the JLR approach uses a touch screen. We keep the interface much like it is on the phone so the user doesn’t have to relearn everything when he is in the car. The Facebook solution would stay blue and white. The TomTom navigation app looks like the TomTom app on the phone. We don’t just mirror what is on the phone. We adjust the app for the car. So you have fewer menus, fewer buttons and bigger fonts.”

Yet another business offering device-to-head unit connectivity is Tweddle Connect, which was acquired for $80 million this past May by the speech technology company, Nuance Communications. Tweddle Connect was formerly part of Tweddle Group, which publishes car user manuals. Smartphone integration technology from Tweddle Connect is part of the Toyota Entune App Suite and Lexus Enform App Suite features, which provide in-vehicle access to mobile applications through compatible smartphones.

iOS in the Car

While much about Apple’s iOS in the Car remains a mystery to many in the industry, Apple’s website gives a summary of what the new iOS device-to-head unit connectivity software provides: iOS in the Car seamlessly integrates your iOS device ... with your in-dash system. If your vehicle is equipped with iOS in the Car, you can connect your iPhone 5 or later and interact with it using the car’s built-in display and controls or Siri Eyes Free. Now you can easily and safely make phone calls, access your music, send and receive messages, get directions, and more.

iOS in the Car is due for release in 2014.

Free features include remote start, door lock/unlock and horn and light flashing.

Volkwagen released an OnStar-like telematics system just this summer called VW Car-Net. Car-Net will be offered on six 2014 models in the U.S. For $199 per year, subscribers receive automatic crash notification, provided by Verizon Telematics, and roadside assistance provided by Allstate. With a Car-Net app installed on an iPhone subscribers will also get remote access features and vehicle status reports. Car-Net can also set speed limits and geographical boundaries for the car. An Android version of the app is on the way.

Nokia’s HERE map business is launching its own embedded infotainment, connected car and navigation platform. Named HERE Auto, the platform brings to the infotainment system the features of Nokia’s HERE smartphone app, which include 3D maps, street level imaging, parking availability and some indoor maps. Nokia will provide carmakers with its operating-system-independent APIs, allowing the OEM to customize HERE Auto. Adding the HERE Auto companion app to your smartphone enables more features such as locating the car in a parking garage, checking fuel level and tire pressure and remote locking and unlocking. According to Nokia, HERE Auto is already integrated into Continental’s next generation Open Infotainment Platform.

One of the difficulties of approaches that integrate what’s on the smartphone with the head unit is that smartphone makers are the ones who are calling the shots. An approach favored by some carmakers is to pair the head unit with an embedded modem and run some of the applications on the head unit. “The best approach is when the carspecific apps are run on the head unit and the phone-specific apps are run on the phone,” said Mr. Lawande. “Apps that work very well in the phone or the car will most likely be delivered on the phone.”

Harman will preview its new platform at the Consumer Electronics Show this coming January.