

telit 2market

The Telit IoT Magazine

The **INTERNET** of THINGS made **Plug&Play**

CONNECT INTEGRATE MANAGE
ONE STOP. ONE SHOP.

The **ENTERPRISE** connected to the **EDGE**

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The **INTERNET of THINGS**
made **Plug&Play**



The **ENTERPRISE**
connected to the **EDGE**



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START CONNECTING YOUR EDGE DEVICES
AND ACHIEVE PRODUCTIVITY GAINS FASTER,
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DEAR READER,

With Europe again looking at lingering economic slowdown, we have recently seen other markets outperform the region both in terms of overall growth as well as investment levels in industry. Because other markets such as North America have remained strong, uncertainty has not broadly affected investments and growth, with the m2m market showing strong performance for the year.

Because of our strong North American presence and expansion into new markets like Australia, Japan and others, Telit has continued achieving positive results even in these difficult times for Europe. Our financial performance remains the best evidence of that. This year we moved beyond our pure m2m focus which we have practiced for more than ten years and into the broader space of the Internet of Things (IoT). We know the market well and understand what adopters need as they look to connect things to the IoT. As a global company with sales offices in all major markets, we can be closer to customers in every region which has been a unique advantage we have maintained in the growing field of competitors in the industry, particularly compared to newcomers from different industries and regional players.

Innovation power also remains a key success factor as we are now able of not only enhancing our modules with value-added services including connectivity but also of connecting the data from these modules directly to business systems from IBM, Oracle, SAP, and others. This allows our customers, for the first time in the evolution of the connected device space, to fully manage deployments including operations under mobile networks, with subscriptions and value added services; and through the Cloud with application enablement platform as a service. So now, with this expanded model, IoT adopters can source all relevant wireless modules, service delivery

platform and enterprise data connectivity as a service from a single vendor. This helps reduce not only complexity in the adopter's supply chain, but complexity in the go-to-market for their connected applications. This new approach that we call The Internet of Things Made Plug and Play will change the game radically propelling us into further robust growth.

The IoT changes the rules of industry as a whole. The technology behind it will help solve numerous challenges facing societies the world over. Productivity gains achieved when systems and devices are connected in real time such as absolute inventory management, remote asset diagnostic and management, automatic data acquisition and Big Data gathering & mining are just too great to overlook. Telit is an enabler of this emerging economic rocket by providing adopters a quick and simplified journey to market.

As President of the Board of Directors, I once again extend my many thanks to the Chief Executive as well as to all managers and employees for their achievements. I must also express my gratitude to our loyal customers for their commitment and trust.

And I now welcome you to this special decade-anniversary issue of our corporate magazine.

Chicco Testa



Enrico Testa,
Executive Chairman
of the Board, Telit



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THE TECHNOLOGY
PLATFORM FOR THE
LARGEST PRODUCTIVITY
JUMP IN OVER
THREE DECADES –
THE INTERNET
OF THINGS.

Oozi Cats, CEO, Telit



CONNECTING THE ENTERPRISE TO INFORMATION ASSETS ON THE EDGE TO ENABLE THE NEXT QUANTUM LEAP IN PRODUCTIVITY GAINS

In the 80s, the PC disrupted Information Systems Management at the enterprise, resulting in one of history's most significant jump in pace of productivity gains across all sectors of the economy. Today we are about to witness another such jump – but one that has the potential of being an order of magnitude more significant than its predecessor from 30 years ago.

As advanced as Information Systems (IS) have become inside the enterprise, they still rely on remote, external data from the edge of an enterprise's operations, which can come from historical averages or from human intervention. The Internet of Things (IoT) is about to change all that as it intersects with the "Fog Computing" movement, which connects every information asset directly to enterprise information systems, no matter how remote the location or how small its size.



The ONE STOP.ONE SHOP (OSOS). virtual patch cable connecting the edge device to enterprise IS.

EDGE



Given its magnitude and scope, the arrival of this new development could disrupt the company's Management Information Systems (MIS). The CEO, his peers, and other managers will want to reach out and obtain the new information coming from the edge of the network.

Decision making is tough, particularly the corporate process of translating strategic planning into tactical execution. Therefore staying focused on the company's core business and on the productivity strategy is the best course of action. For enterprise users of the new data, the IoT connection between edge assets and enterprise IT might feel like plugging in a physical network patch cable: one connection on the edge side and the other on the enterprise services side, whether it's the cloud or a server.

We can visualize this connection, as a chain of chevrons (see figure 1) where each represents a distinct element – a service or a product – that is needed to make the con-

nection functional, safe and manageable for enterprise grade applications.

ONE STOP. ONE SHOP. CONNECTING EDGE ASSETS

With all the technology and services that are available to connect anything to anything available, and the economic scale of productivity gains that can be realized by connecting enterprise IS to things and processes outside the corporation, it is difficult to reconcile the observed uptake with the benefits. The reason is the inherent complexity in this connection. This is something that leading industry players like Telit, Google and many others have been working hard to address.


At the beginning of 2014 Telit launched the ONE STOP. ONE SHOP. delivery model, which simplified IoT connectivity. In November 2014 Telit and Google announced the "IoT Big Data Challenge", an initiative designed to harmonize the IoT-cloud ecosystem. After obtaining


massive amounts of people and people-machine data, Google is now looking to accelerate the collection and business activation of IoT data. And since Telit will to ship around one billion communication devices with embedded cloud-ready clients for the IoT ecosystem over the next 15 years, this collaboration could represent a tipping point that will simplify the process for connecting remote assets. That would result in the fall of the remaining barriers to mass adoption and standardization, both of which would help the enterprise make significant progress toward quantum-leap gains in productivity.

HARDWARE SOLUTION MODULES


In the late 90s, innovators who understood the productivity enhancing power of connected remote assets started stripping first-generation cell phones and turning them into data communication modules that were embedded in numerous devices like vending machines and fleet trackers.




 Therefore, it is fair to say that the connected asset revolution began at the edge, as these stripped cell phones enabled a basic two-way communication channel between IS and remote business devices. Therefore the first chevron in figure 1 is the longest established solution area of the OSOS, the cellular module.

 Edge devices are either mobile or fixed. In either case, once a remote asset can register and exchange data via the mobile network, it will typically require hardware for geo-positioning awareness and/or wireless connectivity to devices and accessories within its local area, short-range network. In figure 1 they are represented by the next two chevrons: the Short Range Wireless and GNSS module solution areas of the OSOS.


VALUE-ADDED, PLATFORM AS A SERVICE, CONNECTIVITY AND SOFTWARE MANAGEMENT SERVICES

 The chevron that follows represents the solution area of the OSOS dedicated to the connectivity and value added services required for provisioning, operating and maintaining edge devices. Cost overruns and other operational issues in this area can become catastrophic for the enterprise in a matter of hours.


 The next chevron represents the solution area of the OSOS that is most visible and closest to the enterprise CIO when connecting edge devices – application enablement, cloud and enterprise integration. Now that data can flow to and from edge devices, its value must be leveraged by applications designed to align it with the business logic of the enterprise systems. Furthermore, this data must be collected, transferred and stored in absolute security and be encapsulated in the proper formats and protocols in order to become an integral part of enterprise information systems from IBM, SAP, Oracle, or others. This solution area has recently grown in importance to CIOs, the media and analysts since the deployment of ever

larger sets of edge devices highlights the need for standardization, harmonization and scalability – all of which are driving factors behind the idea that lead to the Google-Telit initiative.

The quick pace of evolution in business processes coupled with the need to reduce the risk of obsolescence means that, whenever possible, functionality should be implemented in software, not hardware.

 The following chevron represents the solution area of the OSOS dedicated to management of software and firmware running on edge devices. The ability to support software revision control & inventory, perform update & roll-back maintenance on a single module or on an entire deployment is just as crucial a requirement for edge devices as it is for devices inside the enterprise.


SUPPORT SERVICES

 Getting the edge device from its starting point as a stand-alone, disconnected product to an environment where it is integrated, sending and receiving data requires substantial support. The next chevron in the OSOS solution area is dedicated to full project assistance, which is available to the various groups in the enterprise and/or its partners who are responsible for specifying, designing, certifying, testing, and deploying the devices. This area includes support for processes that can make or break a project.

Take, for example, device certification with regulatory agencies and mobile

operators. Any time cellular communication functionality is added to a device, regulatory and operational compliance tests need to be performed and results certified. Failure in any of these tests may require a minor software adjustment or a costly hardware redesign. Adequate support at key stages of the project can help avert redesigns or other snags, keeping the project on track in costs and timing.

LOGISTICS AND QUALITY ASSURANCE

 The final chevron in our OSOS chain represents services related to quality assurance and delivery of products and services that support the manufacture and deployment of connected edge devices. There are numerous models adopted by IS management when it comes to deployment of solutions, ranging from all in-house (OEM) to outsourced manufacturing, outsourced design (ODM), to total project outsourcing. These different models may involve a different number of organizations (regionally and functionally) that are responsible for parts of the project, ranging from specification to manufacturing, deployment and field support.

The ability to apply elements of the OSOS to the total project, irrespective of the makeup and number of partners adopted by the enterprise, is a critical. Flexibility helps CIOs leverage proven project management models in order to further mitigate risk. The ability to source scalable volumes of products and services into one or many logistics/manufacturing sites and into any number of partners

without compromising quality or cost is a fundamental requirement for enterprise grade IS solutions.

THE INTERNET OF THINGS MADE PLUG AND PLAY FOR THE ENTERPRISE

The articles that follow provide more detailed information on the various elements within each chevron in the chain and the OSOS. It is critical to understand the importance of making this connection achieve plug and play simplicity, even if there are system integrators and other partners involved in the solution. The global structure we have built up at Telit to support the OSOS model is designed to accommodate multi-party, multi-region touch points. What that means is that the adoption of the Telit OSOS to connect enterprise assets is simple and that can be prescribed down the supply chain to integrators and other providers. This process will help ensure that the end solution delivers the same benefits of risk mitigation, cost and performance optimization, irrespective of the number and hierarchy of partners and vendors supplying the enterprise.

By now, with the exceptional rise in popularity of the IoT over the past few years, it is a foregone conclusion that both established and new solution providers and system integrators servicing the enterprise market have already aligned with one or more vendors for the elements I have described. Multi-vendor sourcing of solutions in the chevron chain is, however, not easy. Many technical and business areas need to be aligned and harmonized.

Alignment and harmonization will take time. Meanwhile improvements in standards, driven by organizations like GSMA, TTA, GCF, OneM2M and others, as well as advancements in technologies like LTE, will keep making it easier for the enterprise IT organization to implement solutions in a similar way to that of connecting device via Wi-Fi.

Right now multivendor sourcing of the chevron elements that to connect to the IoT, results in more downside than upside potential for the end result. As the CIO, the decision is yours. Make it another successful one – simply prescribe to your organization and providers the need to “Connect my edge assets using the Telit OSOS”.

2014 CELLULAR MODULE YEAR IN REVIEW

With the conclusion of the acquisition of the ATOP business from NXP in April, we reorganized the Telit automotive teams into a full global business unit and in June announced the ATOP 3.5 G, an

HSPA+ automotive grade module with GPS/GLONASS and NFC functionalities all in a hardened compact package.

In September we leveraged our great standing at CTIA's Super Mobility Week in the US to introduce the concept of Cloud-ready modules. At the event we launched a beta version of firmware for the most popular 2G, 3G and 4G variants of the xE910 and xL865 families kicking off the Telit drive of the enterprise towards the IoT. The API embedded in the modules is developer-friendly, open and powered by the popular deviceWISE platform.

In November we announced the introduction of our smallest 3G-only cellular module, the UE866. The product incorporates powerful and reliable cloud-ready firmware and is designed for drop-in replacement migration from 2G to 3G. Also in November we also introduced additions to the xE910 family with the 3G-only UE910 – which incorporates an optional embedded SIM for applications requiring rugged reliability.

In 2014 we retooled our cellular PM and R&D organizations to accelerate the 3G and 4G portfolio enhancement in 2015 with work started in a number of projects including further miniaturization of 3G/4G modules, single mode variants, ultra-low power for wearable applications and many more. In his article on page 24/25, **Felix Marchal**, Chief Product Officer, explores how we are making LTE a success story with the planning of products including a sharply relevant set of features for the Internet of Things, from present and future releases of the technology.





Additionally, in his article on page 18/19, **Yossi Moscovitz**, President Telit Wireless Solutions, explores what makes the elements of the OSOS work and how they complement each other.

m2mAIR – A YEAR OF PARTNERSHIPS TO HELP MAKE IT ALL WORK TOGETHER AND IN MORE PLACES

2014 was a key consolidation year for the Mobile and Cloud operations of m2mAIR. We started the year announcing at Mobile World Congress, increased scopes of value add from both Mobile and Cloud. Then, only six months later, at CTIA's Super Mobility Week, we announced the Cloud-ready

module concept with available developer's kit and free trial portal delivering the m2mAIR Cloud functionality previewed in February in Barcelona.



October saw the highlight of the year for m2mAIR Cloud with the launch of the IoT Big Data Challenge in collaboration with Google Cloud Platform.



Our collaboration with Jasper also progressed in 2014 with new initiatives and programs started with both m2mAIR Mobile as well as with ILS Technology.

At Mobile World Congress 2014 we announced how we were enhancing our partnership with Jasper Wireless, this time to deliver m2mAIR Mobile's Module Management services directly through the Jasper Platform to applications using m2mAIR Mobile-ready Telit modules and operating on the m2mAIR Mobile network. And in April ILS Technology and Jasper announced collaboration to help mobile operators deploy successful IoT initiatives on the Cloud-based Jasper Platform and the deviceWISE Application Enablement Platform (AEP) from ILS Technology.

In July we announced expansion of m2mAIR Mobile coverage across Europe and Latin America by joining Telefonica's m2m Channel Partner Program which has helped us extend the reach of our unique value added services to customers around the globe

And in December we closed the year of achievements for m2mAIR with the announcement of cooperation with Swedish-based Tele2 to provide a number of new premium value added services, VAS, and connectivity solutions for the Machine-to-Machine/Internet of Things, m2m/IoT market.

Read more about this partnering strategy from m2mAIR Mobile Business Unit Manager on page 26/27. And on page 28/29 **Fred Yentz**, CEO ILS Technology, a Telit company explores the power of making it simple.





SHORT RANGE TAKES ON A FAR-REACHING ROLE IN THE IOT

2014 saw the final move of the manufacturing of our short range modules to our large-scale production facilities in Asia. This enabled us to service a much broader range of customers and applications as short range technologies continue to rise in relevance with the increase in hybrid wireless architectures brought about by the wave of innovation in the IoT.

STRONG YEAR FOR GNSS MODULES

In 2014 we also significantly changed our GNSS portfolio strategy to further align it with growing market demand. The multi-chipset/uniform form factor strategy explained by **Felix Marchal**, Telit's Chief Product Officer in page 40/41, allows us to outperform more traditional vendors in the space managing portfolios based on single source of chipset technology.

2014 product introductions started in February with the announcement of the Jupiter SL871. The new module was our second based on MediaTek's low-power MT3333 core. Then in September we introduced the ultra-low power, GPS-only SL869-V2S which shares the xL869 form factor for pin-to-pin compatibility with the JN3, SL869 and SL869 V2.

In October, the SL871-S, an ultra-low power single mode module was introduced for new power-conscious, GPS-only customer devices as well as to offer a drop-in replacement for existing applications designed for the xL871 multi-constellation series.

For 2015, the Telit GNSS Solutions business unit will continue delivering unique market value by ranging different variants of each GNSS module family, each with unique feature sets and leveraging different chipsets while maintaining similar APIs and form factors so that integrators can develop one core design and utilize that design across different products and markets, increasing ROI and shortening time-to-market.

TELIT AUTOMOTIVE SOLUTIONS

In April we announced conclusion of the acquisition of Automotive Telematics Onboard-unit Platform (ATOP) business from Netherlands-based NXP B.V. With the acquisition behind us, we proceeded to integrate the ATOP business including sales, engineering and support staff into a new business unit we created to envelop the combined Telit automotive teams and incoming ATOP talent.

Telit Automotive Solutions, is chartered with expanding the automotive market reach with solutions leveraging our expanded engineering and sales expertise particularly in software-centric RFIs from Automotive and Telematics OEMs.

The new business unit has been operating with remarkable success landing a number OEM and Tier-1 designs in APAC, Europe and North America, leveraging our global ISO/TS16949 compliance and one of the industry's largest product portfolios for the automotive sector with particular emphasis on advanced technologies such as LTE and HSPA+.

Along with the ATOP 3.5 G announced in May, our automotive module portfolio remained strong with members of the xE910 family targeting OEMs and Telematics System Integrators including the GE910-QUAD AUTO and UE910-EU V2 AUTO. Members of the xE920 3G and 4G module family along with the GE864-QUAD AUTO V2



have also seen strong design-in results in '14. In his article on page 34/35, **Dominikus Hierl**, CEO of Telit Automotive Solutions takes a deeper dive into the dynamic automotive market.

SOLID RESULTS CONTINUE IN 2014

2014 was a year to focus on concluding the integration of the three acquisitions of 2013. It was also the year ONE STOP. ONE SHOP strategy became our industry's gold standard with a number of competitors announcing similar strategy and analysts repeatedly touting it as the top approach to accelerate mass adoption in the IoT. In his article on page 30/31 **Carlos Perez**, EVP Global Sales, explores additional detail on selling the IoT now and into the future.

For Telit, the continued successful execution of the OSOS strategy is expect to result in unaudited revenues for the year ended 31 December 2014 of approximately \$294 million, representing an increase of 21% compared to revenues for 2013 (\$243.2 million). The OSOS strategy will continue contributing significant streams of recurring revenues to Telit's topline.

GLOBAL HIGHLIGHTS

Along with the final touches on the integration of ILS Technology, CrossBridge Wireless and ATOP (from NXP), in 2014 we performed substantial

restructuring of our logistics and operations areas. A new global operations hub was established in Cyprus and further consolidation was carried out on the number and location of our manufacturing sites, lining us up to comfortably sustain growth in product shipments the for coming years. The new structure was also conceived to support a variety of possible new business and supply models from the new business unit – Automotive Solutions. Read more about the reinvention for the next decade of growth by **Yosi Fait**, President and Finance Director on page 16/17.

On page 46/46, **Emmanuel Maçon-Dauxerre**, Senior VP Sales EMEA explores the region's solid results despite adversities stemming from of a slowing regional economy, the EBOLA crisis in Africa and a spike of unrest in the Middle-East.

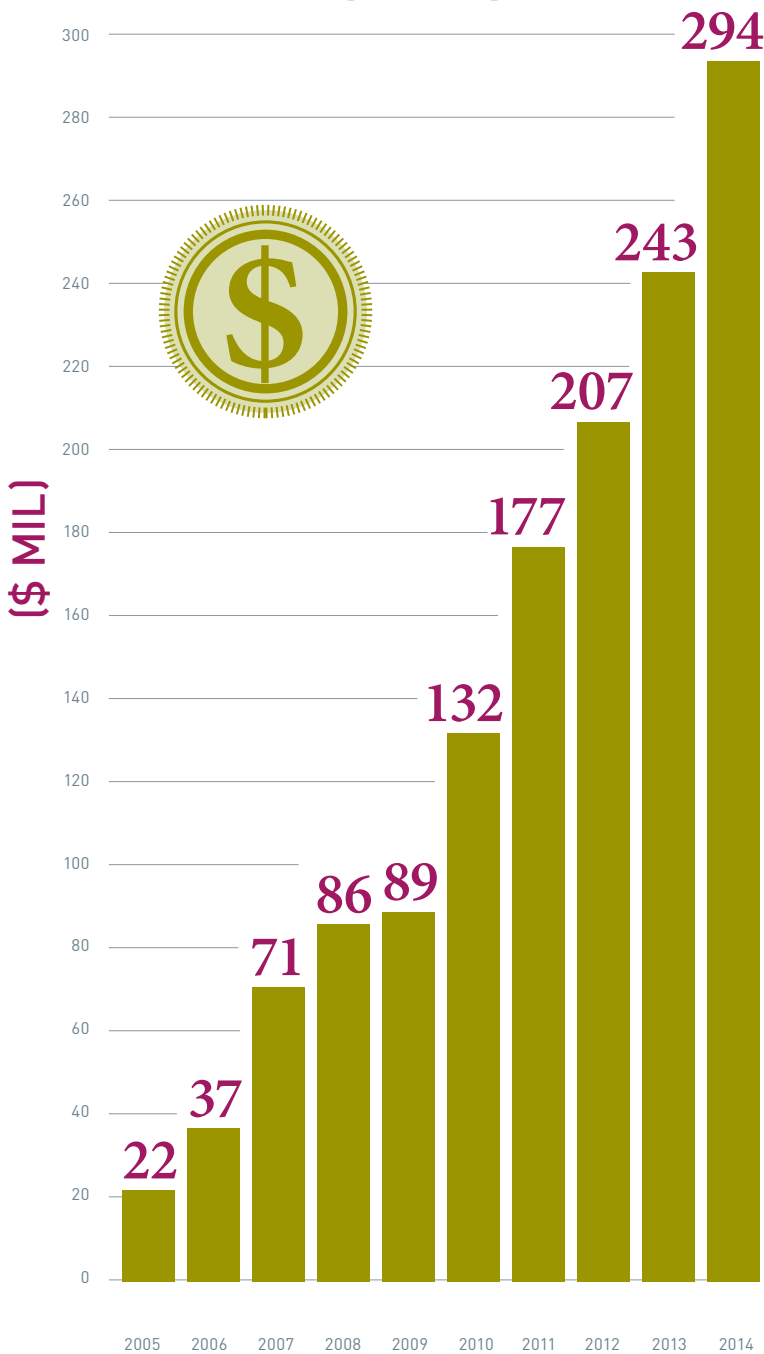
Mike Ueland, President of Telit Americas details the region's performance in his article on page 48/49. North American IoT continues growing faster than analyst's expectations on a favorable economic climate and high demand for products and services from businesses based on legacy 2G applications looking to redesign and redeploy in time to avoid black-outs with North America's incremental grooming of spectrum away from 2G and into 3G and LTE.

The APAC market continues to hold much promise with India's new government, our new operation in Japan and the success of our automotive products with OEMs in Korea and China. The region's rising star in this past year though was Australia with a number of successful quick-ramping projects in the Telematics and Healthcare segments. In his article on page 50/51, **Derick Tsang**, President APAC shares more insights into the region's performance.

In 2014 we also embarked on a corporate citizenship project that I am very proud of. In April we signed on to sponsor Alexander Shatilov, Israel's

10 YEARS OF PUBLICALLY TRADED REVENUE GROWTH

[LSE : TCM]



top athlete and world number four gymnast in floor exercises. Read about Alexander, his life and dreams on an interview here on page 146/147.

2015 AND BEYOND

The IoT is growing faster than anyone could have foreseen. And by growth, I mean not only financial results for those of us traditionally in the space but also the relative success experienced by quite a number of innovators within the avalanche of entrants into our industry. All shapes and sizes of companies from Google to small startups have moved quickly to stake a claim in the IoT. And as much as it has been a dynamic ride so far, this will soon pale in comparison to substantially more exciting times from here onward.

We will be riding the crest of the IoT wave and continue executing with relentless passion the strategy we stated years ago of making the Internet of things Plug and Play for Enterprise, automotive OEMs, system integrators and all other providers in the space.

Now, come IoT with us,

Oozi Cats
Chief Executive Officer
Telit Communications PLC

OUTPACING THE MARKET

EXCEPTIONAL RESOURCES ENABLE EXCEPTIONAL GROWTH

Yosi Fait, President and FD, Telit

Well-managed resources drive sales, which in turn allow the company to finance acquisitions and invest in the creation of new, synergistic activities. It's a virtuous circle and now we are witnessing tangible, financial results. Revenue generated from our Platform as a Service (PaaS) grew by more than 180% in the first nine months of 2014.

The acquisition of ILS Technology in September 2013 facilitated the expansion of m2mAIR Cloud, the company's PaaS offer, and a year later we introduced the first m2mAIR Cloud-ready wireless modules. This combination of hardware and value-added network services represents an exceptional set of resources. Moreover, it's one that will allow Telit to leverage the potential created by a cumulative module shipment of over 100 million units by 2018 and become the leading provider of cloud-centric m2m services.

It's clear that this development was a key component of our corporate strategy, but success in the IoT marketplace that is becoming even more competitive every year also comes from human and other resources that are distributed around the world. See the "Key Statistics" sidebar. That is the infrastructure that has underpinned our success since the start of the millennium and it is not something that new entrants whose resources are centralized can realize in the requisite time frame.

EXPLOSIVE GROWTH

Analysts and the media indicate a market comprising 60 billion or more consumer devices and that tends to overshadow the importance of the industrial sector, which is established, robust and the area where Telit is currently



the market leader. This sector is estimated to comprise over 13 billion connected devices by 2022. It will be cloud-centric, that is a given, and successful implementation of these next-generation, end-to-end solutions will require a comprehensive set of support services, available locally in the appropriate language. It is worth noting that research by LNS Research indicates that 43% of business professionals don't understand the IoT, which underlines the need for support.

KEY STATISTICS

- * 25% average growth year-on-year over the last five years
- * Over 5,000 customers
- * 7 successful acquisitions in 3 years
- * 780 employees in 5 continents
- * 8 R&D centers; over 460 engineers
- * 35 sales offices; 60 exclusive distributors; global coverage
- * Sales force of about 350 including distributors
- * 8 outsourced EMS facilities

In turn this indicates the importance of an infrastructure where human resources (HR) and organizational development (OD) are monitored and managed locally by senior managers. A flat, horizontal model is essential in order to accommodate a rapid increase in sales as well as the increasing complexity of Industrial Internet solutions. Issues can be addressed as soon as they occur; they do not need to be moved up the line

to a central office. In addition this model saves money, less office space is needed, therefore overheads are minimized. It also provides a more efficient, agile way of working: it cuts costs without cutting corners. We call this evolution Horizontal HR and Horizontal OD.

NEW OPERATIONS HUB

Sales of our cellular m2m modules reached 13.2 million in 2013. They are set to reach about 17 million in 2014, rise to over 21 million in 2015* and again to about 40 million in 2018*. These figures indicate the need for a strong central operations and purchasing hub for components, finished products and materials. Management decided to promote a central facility for that purpose, set to be operational January 2015. From there it will provide full operational service to the organization, one that will allow the company to meet all our customers' requirements.

CONCLUSION

For a large established company to deliver double-digit growth for a few years in a row takes genius. To do it for decades requires a top-down breaking with traditional management styles. Telit has experienced exceptional growth: 25% year-on-year average for the last five years. And while doing that we have played a significant part in expanding the m2m market, which is entering a new cloud-centric IoT era. The successful acquisition of ILS Technology, one of seven in the last three years, has resulted in a market-leading PaaS offer, fundamental to our continued rise, but far from the final chapter in rewriting the management book. Telit is ideally placed to become the leading provider of cloud-centric m2m services in that IoT era and passionate about getting and staying there.

* Calculated from growth forecasts reported in market research



ONE STOP. ONE SHOP. ENABLES THE IOT

In 2014 Telit introduced its ONE STOP. ONE SHOP. (OSOS) offer, which comprises the underlying technology elements that enable the fast development of IoT applications and services.





Yossi Moscovitz, President, Telit Wireless Solutions

WHAT IS SO UNIQUE ABOUT TELIT'S OSOS?

The OSOS offer encompasses all Telit products and services:

- * Cellular modules
- * Short range communication modules
- * GNSS modules
- * m2mAir Mobile, connectivity and value added services
- * m2mAir Cloud, PaaS offer
- * Telit SWM, software management services

Each component in our offer is designed to match the requirements of m2m and IoT developers. They are “stand-alone” components, each of which offers competitive performance and a feature set based on Telit experience accumulated over a decade of leadership in the market. As an IoT developer you are free to choose any of these building blocks when designing your system.

The uniqueness of the OSOS offer comes from the tight integration of the different building blocks and

the unique functionalities realized by combining two or more OSOS elements.

Some examples:

- * Integration of Cellular and GNSS modules. When using a Telit Cellular module and a GNSS module, the cellular module can be used as a “master” that controls the GNSS module. This feature is based on simple-to-use “AT” commands embedded in the cellular module firmware.
- * Integration of Cellular and m2m Air Cloud. New firmware on several cellular modules embeds APIs that allow direct access to the m2m Cloud using simple “AT” commands. This feature shortens significantly the development time required to deploy a cloud based cellular solution.
- * Integration of m2m Air Mobile and Cellular. m2mAir Mobile offers premium connectivity and value added services. The connectivity service can be deployed with any cellular device. When used in conjunction with Telit

cellular modules, the service provides an additional layer of features based on the embedded functionality of the modules. For example: remote diagnostic, monitoring of network quality and performance, positioning of the device and many other functions.

* Software Management Services. Telit Cellular modules support Firmware update Over The Air (FOTA). A new service will enable Software Management Services (SWM) through a web server. Telit customers will be able to subscribe to the service in order to manage software updates as well as the application software.

* Application layer (AppZone) – Telit cellular modules enable the use of the internal processor for the application software. The AppZone allows integrators to develop and execute the application software right on the module. It supports several languages (C, Python, Java) and will be supported by an Application Development Environment (ADE) that provides a growing number of tools and APIs for easy development and debugging.

As a Telit customer, you have experienced the value and quality of our products. The OSOS takes our offer to a new level. Using our OSOS building blocks will significantly reduce your time to market, development costs, recurring operational costs, and also increase the scalability of your application.

www.telit2market.com –

THE GAME-CHANGING IOT RESOURCE PLATFORM

For ten years now, telit2market has been reporting on developments and changes in the world of m2m technology. Trends have been identified, reports provided on new markets and new technologies; and examples of innovative and pioneering products have demonstrated the wide range of possible applications of m2m. In the very first edition of telit2market in 2006, we were able to present a total of 10 case studies – each one a bright new example of what was then still a new technology in many areas. In recent years, a great deal has changed and moved on. Not only has the number of m2m applications grown enormously – and it will continue to rise massively in the next few years – but the variety of fields of application has also expanded. If, for example, wearable technology still sounded like something for the future – almost like science fiction – to many back then, today it is a familiar and widely used tool for end consumers. The spread of mobile devices like smartphones and tablets has played a significant part in taking m2m technology out of the business environment. m2m has long since moved into everyday life and will continue to shape it in the long term. New technologies will lead to

lasting changes – in particular the trend towards the Internet of Things, which began only a few years ago but is now present in all areas of life.

CONNECT YOUR BUSINESS TO THE EDGE

Even for industry insiders, it has become difficult to maintain an overview that remains up to date for any length of time. Which new applications are currently on the market? Where is the technology journey taking us? What do users want? Which security aspects should I pay attention to? What are the legal ramifications? And how can I integrate my company into the world of the Internet of Things most efficiently? These questions require answers that have more than just a technical orientation. It is more a matter of setting a strategic course here. A decision that must be taken at and should be the responsibility of the highest level in a company. These are just a few reasons why a resource platform that provides both up-to-date and comprehensive information about these and many other issues can be extremely valuable. Tomorrow even more so than today.

BREAKING NEWS AND BACKGROUND INFORMATION

telit2market has responded to constant change launching an online platform "www.telit2market.com". In so doing, we created the ideal combination with the two media – a printed magazine and an online platform: in the printed version of telit2market, we continue to focus on longer-term, fundamental trends and developments reporting comprehensively on selected applications once a year. On the new online platform, you will now find the latest breaking news alongside regular new reports from the world of the Internet of Things. Hand selected experts report on the latest issues, new technologies and market developments that are being discussed. Additionally, the online edition presents examples of applications from all areas – transport, energy, consumer, professional, security and healthcare & well-being. We are thus able to respond promptly to current developments and trends and deliver them right to your tablet, smartphone or desktop.

FEWER CLICKS, MORE CONTENT

Our online platform also provides access to over 400 articles from the last six years of telit2market. You can choose between editorial articles and case studies, sort by country, company and author; or select individual headlines and browse for articles of interest to you. You can also set up the portal to notify you via RSS feed as soon as a new article is online.

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ENERGY

27 FEBRUARY 2014

AMI SYSTEM FOR BATTERY - OPERATED WATER METERS

Yakup Uluca, R&D

"Electromed offers complete AMI system solutions that feature Telit Short Range RF and GPRS Modules."

Electromed is a market leader in Turkey, designing and producing utility meters - water, gas, heat and electricity - as well as meter communication technologies.

The company has also completed some AMI projects last year. AMI investments will increase in the near future, one driver being the fact that natural resources are decreasing with every passing day. Electromed decided that the most efficient investment would be critical. AMI systems must be interoperable, future-proof, and be based on international standards. Electromed has introduced a new system for water meters that meets these requirements and is based on the basis of RF LAN and GPRS WAN communication.

AMI will only be possible if the meters are operational remotely. The meters of customers whose consumption is high can be connected directly to WAN, but this is not cost-effective for residential meters. In this case the optimum solution is to enable communication over a LAN communication, using many meters, and to connect them to the WAN communication using a single gateway. The best way to enable a LAN solution for battery operated meters is to use short range RF communication. Mesh topology is not suitable for battery-operated meters, so we chose a star topology as well as the enterprise M2M protocol. The 868 MHz frequency is an ideal band when one considers the size of the antennas and the required communication distance. Telit's M2M-868 module was selected because of the time-to-market, reasonable cost and good technical support.

Electromed has many projects that employ RSC (Remote System Communication) GPRS gateways. RSC is widely used for AMI/AMI for electricity meter, irrigation and hot water consumption control systems. They can communicate via one of the RS232, RS485 and PLC modules in LAN systems. Different GPRS module solutions were tested and used. However, Telit's solution met the requirements according to new market requirements. The DLR43 V3 features multi-socket capability as compact module. By configuration, small dimensions, low cost, easy development and good performance.

Article Tags:
Advanced Metering Infrastructure | AMI | AMR | Automatic Meter Reading | GPRS | LAN | Radio Frequency | RF | RS232 | RS485 | hot water consumption | WAN | water-meters

System:
Advanced RF Water Meter and RSC RF Gateway

Which Telit module do you use and why?
M2M-868 RF Module and DLR43 V3. We selected these products for their low power consumption, excellent price and compliance with European standards.

Benefits:
AMI systems are only possible if the meters are operational remotely. The battery operated meters can only be integrated into the system via RF modules. Advanced RF water meters employ a short range, internal RF module and they support the universal M2M standard. RSC RF gateways employ short range RF communication for meters and IP uplink capability via GPRS for WAN communication.

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AMI SYSTEM FOR BATTERY - OPERATED WATER METERS

System:
Advanced RF Water Meter and RSC RF Gateway

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ONE STOP. ONE SHOP.

HOW WE GOT HERE AND WHERE WE'RE GOING – A VISIONARY CONCEPT EXECUTED WITH ENERGY AND PASSION



Alexander Bufalino,
Chief Marketing Officer, Telit

Accelerating the cost-effective and risk-free creation and deployment of connected devices to the Internet of Things (IoT) is our enduring and only mission. Our vision is to help you connect your solutions to the IoT and bring them to market faster, with less cost and risk. This groundbreaking concept allows adopters to focus on their core competence, the creation and delivery of innovative apps.

The traditional m2m value chain is fragmented: different companies market different components, and although the industry has been very successful, this fragmentation is impacting on future growth. There is a clear and compelling need to defrag the value chain, to mask its complexity delivering a one-vendor connectivity offer that spans data

collection through to data processing. That way, adopters can focus on the two ends of the connected solution (their intellectual assets and business processes).

This concept can only be realized if the IoT vendor owns all the components: that is truly and absolutely the only way to dissolve the links between the three key components. As visualized in the following diagram, this process starts with cellular and other wireless modules at one end; then we have network services in the middle; and Platform-as-a-Service (PaaS) at the other. That is the foundation of Telit's ONE STOP. ONE SHOP. (OSOS) offer.

Entrants know what data they want to monitor and manage. They also know how they will make sense of that data, e.g. process it into real-time information that is transferred to the company's ERP system. OSOS delivers the matrix of products and services in the middle which together connect their assets to the IoT.

HOW WE GOT HERE

We started the OSOS build-out process about a decade ago with a very clear vision of the requisite functionality, strategic corporate grooming and a number of acquisitions of companies, technologies and other critical assets which have been successfully incorporated into Telit over this period. That was the first step which led to an aggressive, unparalleled expansion of our modules portfolio. That effort also resulted in the best-in-class offer in all categories: cellular, GNSS and short-range. The breadth and depth of our

product offer today ensures our ability to continue delivering optimum solutions across all major sectors. Reminder: modules are the 24/7 beating heart of every m2m solution and the precursors of the connected device revolution that has converged recently with other movements in Cloud and Big Data developments, which have been enabling the dramatic changes we experience every day to a higher degree in our daily lives.

The second step took place in 2012 when we launched m2mAIR with the vision of effectively fusing the first two links in the chain, the wireless modules and the connectivity service. That was a game-changing development that made Telit the world's first one-stop shop for managed m2m solutions. With substantial internal investment and one additional acquisition in the US the following year, m2mAIR expanded its geographical coverage.

The third step came via the acquisition of ILS Technology in September 2013. ILS is an established vendor and the company's



EDGE

management and engineering team has been active in m2m for 30 years – handling machine-born data communications long before the term was ever used. That was a particularly significant development.

SUPPORT SERVICES

This is yet another impressive portfolio and another pillar of the OSOS: everything customers need by way of support. Telit has such a robust support structure that it recently figured as one of six companies profiled in a market report on the increase of testing requirements fostered by the expansion of the IoT movement. It is important to note that all the other five companies are in the business of engineering and RF testing – only.

We provide 360-degree global technical support that starts with a design review, which includes advice on components, placement, schematic and PCB review as well as software integration support. This phase is particularly important since it minimizes issues arising at a later stage, e.g. when certification for deployment on an MNO's network is needed.

The second segment involves numerous RF/EMC pre-certification tests at the application level. This speeds up the certification process and helps get solutions to market faster. The third segment embraces fast, easy deployment via m2mAIR Mobile and Cloud

WHERE ARE WE GOING?

There is nothing complex about the OSOS for adopters of the IoT. It does comprise leading-edge technologies as well as two priceless commodities – experience and commitment to meeting the demands of our increasingly connected world. OSOS started life as a vision that was realized via groundbreaking developments.

And just as we sit in awe experiencing the grace and ease with which Alexander Shatilov (See article on page 144) performs his Olympic floor exercises, so do OSOS customers with their IoT projects. Even the richest, most well intentioned individuals cannot realize his standing as the fourth, top floor gymnast in the world in a few weeks, months, or even years.

OSOS is unique and an industry gold standard because it is a vision relentlessly executed for over 12 years, with the same passion and energy as our brilliant Telit sponsored athlete. Telit has created a brand-new business model that is opening up the market to new adopters who have innovative ideas and specialist knowledge of a market sector. OSOS is the new standard for mass IoT adoption.

The standard is set, now there are no boundaries in the m2m-IoT space. Experience it for yourself.



FUTURE DIRECTIONS –

THE BEST WAY TO PREDICT THE FUTURE IS TO CREATE IT



Felix Marchal,
Chief Product Officer, Telit

The pace of m2m and IoT innovation is accelerating. LTE-M and numerous other developments are impacting on large sectors of the global economy. Telit continues to play a leading role in a vibrant industry that we helped create and where we are well positioned to meet future challenges and opportunities.

The industry is experiencing double-digit growth and the proven ability of m2m solutions to deliver tangible benefits has led to the entry of new players that have massive financial and technology resources. However, what really counts is the portfolio of focused m2m resources that make up Telit's unique ONE STOP. ONE SHOP. offer. This allows customers to focus on

the creation of innovative applications based on their core competence, i.e. the knowledge and experience of a particular market sector. Our core competence is the complementary ability to facilitate the cost-effective creation and deployment of edge-to-app connectivity that deliver revenues in short timeframes.

At the connectivity edge we have a comprehensive portfolio of best-in-class cellular, GNSS and RF modules. They are the 24/7 beating heart of every m2m solution. At the app end there is m2mAIR Cloud, a Platform-as-a-Service (PaaS) offer that allows customers to collect data from any device and integrate it directly into enterprise systems for big data analytics.

EFFICIENT COMMUNICATIONS

GSM cellular networks have evolved over the years: 2G, 2.5G and 3G. LTE (Long Term Evolution) is marketed as 4G but LTE networks are significantly different to those earlier generations. They are based on a simple, flat, all-IP architecture that is more efficient and that can accommodate up to 10 times more traffic, which will be needed to handle the deployment of tens of billions of smart devices. LTE is also much faster and going higher to meet the requirements of smartphone and tablet users, but high data-rates are not required except in m2m sectors such as video surveillance and in-car infotainment.

But LTE represents the future for MNOs and the technology has the potential to deliver significant benefits for m2m communications. For example, the efficient use of spectrum can reduce the cost of delivering services. For devices that stay in the field for 10 or more years, LTE future-proofs the solution against 2G and 2.5G networks being discontinued. The only downside is the higher cost of the modules, which is the inevitable result of the cost and complexity of the chipsets.

LTE CAT 0

Prices will come down over time, but a more significant reduction is needed now to make LTE modules an attractive proposition for regular m2m applications. The leading chipset vendors will continue to focus on the consumer market, for example, new developments are taking place for category 7, but the recent announcement that LTE category 0 has become a 3GPP standard changes the equation. This low data-rate, machine-communications-focused operating category in LTE looks set to create a significant market opportunity for other chipset vendors, helped by the fact that the Cat 0 design is significantly simpler, as are other elements of the module: for example, integration of the power amplifier in single chip solution, half duplex operation and a new power-saving mode.

Cat 0 is in its early days, but going forward the reduction in complexity it brings to LTE modules will drive cost down to something nearer that of a 2G. Then consumer LTE will become an attractive proposition for mass adoption by the IoT. The data rate will also come down, to around 1 Mbps, but that is more than adequate for the majority of m2m applications.

It will be sometime before the new chipsets and modules are certified and devices are ready for deployment, but Telit is tracking this development very closely and as indicated earlier, we are ideally placed to meet this type of future challenge and opportunity.

COMMUNICATION PROTOCOLS

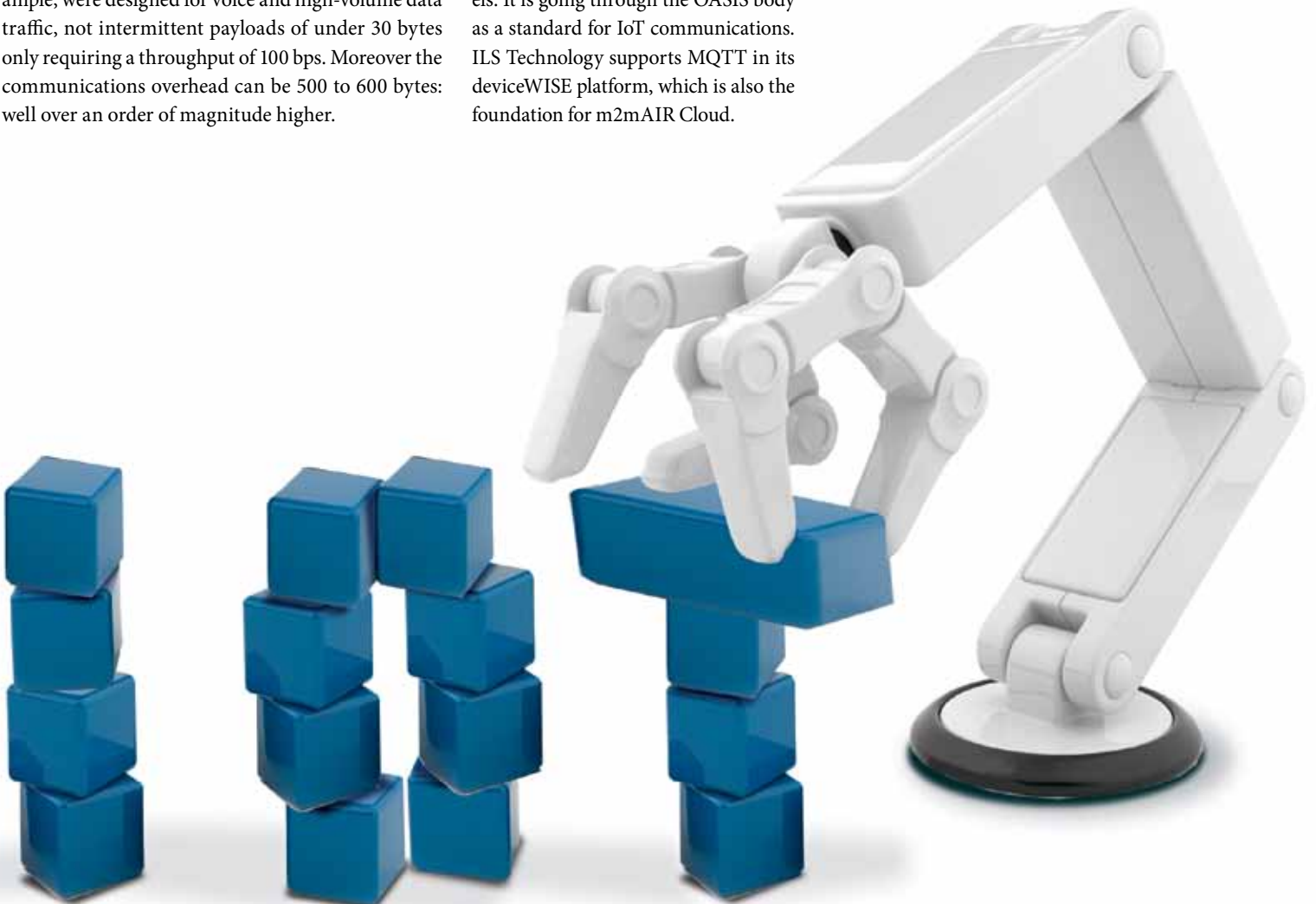
m2m traffic comprises very small data packets that are transmitted at regular intervals, e.g. every 15 minutes. The communications protocol of the Internet (IP) is widely employed but it is not an efficient way to handle low-volume traffic. Cellular networks, for example, were designed for voice and high-volume data traffic, not intermittent payloads of under 30 bytes only requiring a throughput of 100 bps. Moreover the communications overhead can be 500 to 600 bytes: well over an order of magnitude higher.

That particular issue has led to the development of lightweight protocols, such as 6LoWPAN (IPv6 over Low power WPAN), a somewhat clumsy acronym but one that is set to become an IETF standard. Low power indicates that it targets wireless sensor networks that run on batteries for years. LTE supports IPv6, which expands the addressable IP space to an inexhaustible figure, far more than is needed for even the most optimistic estimates of IoT device deployments, e.g. 50B by 2020.

Message Queue Telemetry Transport (MQTT) is another lightweight protocol, but it is also a technology. IM-type messages can be used and files exchanged, which means that transportation is payload agnostic. In addition MQTT has three QoS (Quality of Service) levels. It is going through the OASIS body as a standard for IoT communications. ILS Technology supports MQTT in its deviceWISE platform, which is also the foundation for m2mAIR Cloud.

CONCLUSIONS

Innovation, which continues on all fronts, will position Telit as the top LTE-based-edge-to-app connectivity provider for the IoT: Low Cat LTE modules; LTE specific connectivity and value-added services; and light-weight protocol support development to be available in sync with the arrival of the Low Cat LTE modules. Visionary execution like this full LTE solution approach will ensure that Telit continues playing a leading role in a vibrant industry that it helped create and that it remains best positioned to meet future m2m and IoT challenges and opportunities.



CHANNEL IS KEY – PARTNERING FOR THE COMPETITIVE EDGE



Yossi Moscovitz, President,
Telit Wireless Solutions

In today's business environment, competition is fierce. That is why, in the latter part of 2014, m2mAIR Mobile launched a new partnership program to enable our channel partners to drive growth and competitiveness for their businesses. By pairing up with key players, m2mAIR Mobile's

Partnership Program (MPP) merges our value-added services offer with our partner's expertise. This enables them to deliver even more robust services to their own customers. MPP is based on a fixed and well-defined taxonomy of partners, and is targeted at IoT/m2m solution providers, Mobile Network Operators, IoT/m2m managed connectivity providers and m2m application vendors.

What we offer – and what our partners can build on

m2mAIR Mobile network services provide flexibility in configuring connectivity services, together with tailored rate plans designed to deliver exactly the connectivity your customers need, without charging for what they do not.

Our value-added services portfolio provides benefits from tools and resources, including:

- * The first industrial-scale Mobile Device Management (MDM) service based on the module.
- * Easy-to-use services to manage module inventory, to perform network diagnostics, test IP and hardware – even perform a module reset.
- * A quick and easy way to analyze the business performance of your m2m deployments.
- * Advanced and customizable monitoring tool to provide you a constant view of the behavior of

an entire m2m deployment according to KPIs & Rules that you can easily configure.

And that is just scratching the surface . . .

Our mission is to make m2m connectivity seamless and pervasive. By partnering with key industry players, together we can effectively turn that connectivity into a part of the end customers' bill of material.

What is in it for our partners and their customers?

Together, m2mAIR and our partners are able to deliver unmatched serviceability for their connected devices, as well as superb quality of service for their connections. Plus, our partners can offer these benefits to any size customer, out of the box – not limited exclusively to large enterprise ones.

To do so, we select partners who can commit to building their vertical applications to once that are incorporating our APIs, whether for Module Management, Automation, Switch, or any of our other specialty services. By doing so, our partners are able to take their solutions from “me too” offers to ones “miles ahead”, not only competing better, but truly winning in the marketplace.

Moreover, when partnering, we are committed to servicing their customer base as our own. Leveraging the Telit ONE STOP. ONE SHOP. philosophy we assist not only with network services, but also with technical support, lifecycle management and more.

With more than 800 customers benefiting from these services around the world, and another 700 in the pilot phase of their rollouts – we have every confidence our partnership approach will open the door to value heretofore unseen.

Won't you join us? Get in touch with the m2mAIR team: support@m2mair.com





Fred Yentz,
CEO ILS Technology,
a Telit company

m2mAIR Cloud

DEVELOPING YOUR OWN M2M/IOT APPLICATIONS MADE EASY

ILS Technology just celebrated the one-year anniversary of being part of the Telit family... and what a year it has been. The integration has been highly positive on all fronts – innovation has accelerated and our products and services are now fully aligned to offer our customers a unique “ONE STOP. ONE SHOP.” experience.

GETTING STARTED IS EASY

Connecting your “things” to the Cloud has never been easier when using Cloud-ready Telit Wireless Modules, m2mAIR Mobile wireless connectivity and the m2mAIR Cloud service that simplifies the creation of end-to-end applications for m2m and the Internet-of-Things – from rapid-prototyping to basic entry-level solutions and full scale enterprise-grade deployments across the globe.

The m2mAIR Cloud Platform-as-a-Service (PaaS), powered by the popular deviceWISE Application Enablement Platform (AEP), lets you connect, collect, and control anything with bi-directional data transfers between your things and the Cloud.

REDUCE RISK, TIME, COMPLEXITY AND COST








A simple “pay-as-you-grow” usage-based subscription plan gives you unlimited access to all features and capabilities of a proven and mature platform – reducing the risk, time-to-market, complexity and cost versus building your own custom point-solutions.

If you’re starting out, the easy-to-use portal has all the necessary visualization tools you will need for most remote tracking, monitoring and control applications across all industries and markets, right out of the box. m2mAIR Cloud also meets the most stringent requirements of global organizations that rely on mission-critical reliability, security, scalability and enterprise-grade performance for the Internet-of-Things.

THE POWER OF deviceWISE

Leveraging the power of deviceWISE, m2mAIR Cloud includes a comprehensive set of functions that are considered the industry benchmark for m2m/IoT deployments:



- 
Thing Integration: Connect, collect, and control virtually anything – new or old – using a variety of software agents and APIs with built-in drivers and edge intelligence, including: Cloud-ready Telit modules, Gateway Agent software, and Open APIs.
- 
Device Management: Complete remote updates and configuration management – run campaigns to single devices, groups or all.
- 
Network Integration: Integration with MNO’s m2m provisioning platforms allows a simplified user experience across any wireless network.
- 
End-to-End Security: Configurable security settings for device and user authentication and registration, role-based permissions, encryption, and audit and reporting.
- 
Cloud Data Storage: Comprehensive management portal and scalable data storage.
- 
Application Integration: Open APIs for web-based and mobile apps and dashboards, from simple functions to big data analytics.
- 
Enterprise Integration: Built-in Enterprise Gateway technology for integration with enterprise systems from IBM, SAP, ORACLE, Microsoft, Any SQL, Webservices, etc.

DO-IT-YOURSELF

Designed for ease-of-use, m2mAIR Cloud provides all that’s necessary to build your own m2m/IoT solutions - from prototyping to commercialization.

- * Extensive developer resources and support
- * Self-registration and configuration
- * Intuitive customized management portal
- * Click-to-Cloud configuration and visualization tools
- * Evaluation Kit for advanced rapid-development
- * Unlimited access to the thriving deviceWISE community

A THRIVING ECOSYSTEM

Customers looking for a little extra help or a turnkey solution can also leverage our ever-expanding network of recognized m2m/IoT technology and product developers, system integrators and telecom

carriers, as needed. Resources include deviceWISE Ready hardware and software, professional services and integration support, wireless network services, custom point solutions and applications, and end-to-end commercial deployments.

In practical terms, the deviceWISE community represents all aspects of the entire m2m/IoT ecosystem whereby all parties benefit from the interaction and collaboration around a common technology and commercial platform – allowing participants to focus on business innovation, not “plumbing”. For example, the power of the deviceWISE open ecosystem means that m2mAIR Cloud customers can get to market faster with instant access to a virtual market place for their products and services. Similarly, Application Service

Providers (ASPs) can promote and market turnkey applications for telematics, energy, agriculture or any other market segment as plug-and-play solutions across a growing number of mobile networks that are powered by deviceWISE around the world.

We know there is an unimaginable number of ideas out there that ONE STOP. ONE SHOP. will bring into being. We will continue to add value with improvements in features, capabilities and integration of the ONE STOP. ONE SHOP., the industry’s new gold standard.



SELLING THE ENABLER OF THE IOT – TECHNOLOGY'S BIGGEST REVOLUTION



Carlos Perez,
EVP Global Sales, Telit

We are living a very exciting time in m2m and the IoT which, more than ever, reinforces the value of working with a global leader in the module space. Today, we see very different paces of movement towards technology evolution in different regions of the world. On one hand we have countries like the USA, Korea and Japan already boasting large rollouts of LTE networks, comfortably able to see deployment of products in the field with no fall back to 3G or 2G. And while this is going on, in Europe we still see 2G as the dominant technology in a market asking many questions about the role 3G will play within the

IoT given the delay in adoption of this technology. Answers for these questions become harder to obtain when one considers how the rapid uptake of LTE in the consumer market has pushed the rapid deployment of LTE networks throughout different countries in Europe.

To complicate this challenging landscape even more, we see LTE moving into two different development directions: one focused on the consumer market, mobile computing and automotive, where high speed for data transmission is required; and another one focused on m2m and the IoT where not high speed data but low power consumption, long term availability and price are driving technology development. This is reflected in the proliferation of categories we see in LTE. The range now goes from Category 8 (1200 Gpbs download and 600 Mbps upload) to Category 1 (1Mbps/1Mbps); with a Category 0 or Category MTC (0.2 Mbps/0.2 Mbps) now under discussion.

Last but not least, we keep seeing consolidation in many verticals (energy, telematics, security, etc...); and this is pushing globalization significantly fast among companies that need to deliver competitive products all around the world. Telit is able to guide these companies through the optimal path

towards selection of the right technologies for their target markets. Our family product concept, i.e. xE910 or xE866, and our deep understanding of the different markets given our longstanding local presence in all regions, allow our customers to minimize investments in development with a single design that can host different modules adapting their products to the different regional variants they need for the different countries they want to address. This is important for large players in the industry that are already global but even more so for those challenging themselves or looking to become global in the mid-term. We allow them to focus on their core businesses and competencies eliminating the need to spend time on know-how acquisition in communication technologies which is our core competence. This opportunity to focus on one's secret-sauce-only further secures and protects investment in the long run.

The latest addition to our services offering – m2mAIR Cloud – is the final building block that customers have needed to get them to market in a very short time. Now, a global connected product can be brought to market quickly and cost effectively integrating a Telit module, running m2mAIR Mobile connectivity and VAS, using cloud services directly enabled by our modules and developing their application using simple APIs and our AEP. It is the Telit ONE STOP. ONE SHOP effect.

We are living in a global, fast-moving marketplace where you need global partners to succeed. Telit is top-positioned from many perspectives to help you reduce your time to market, protect your investment and succeed globally.



LTE



LTE



2G



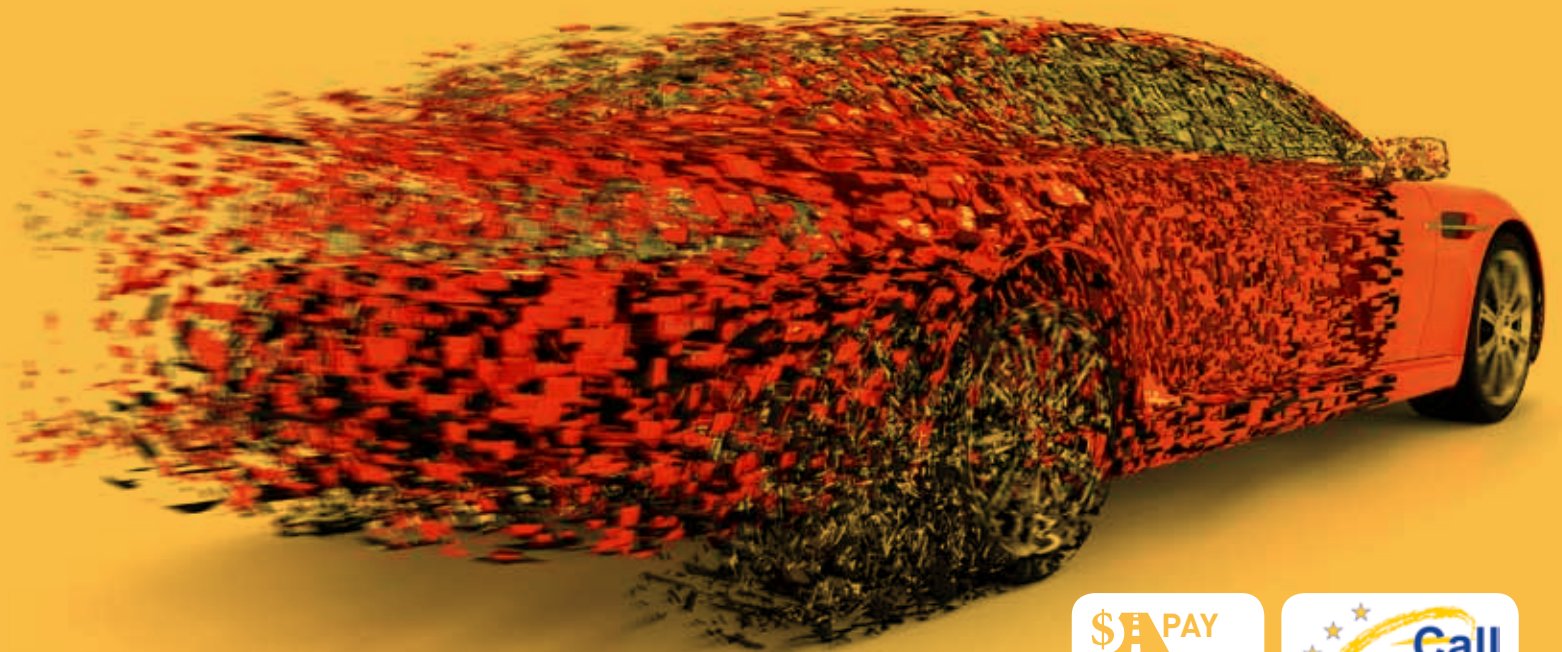
UNBEATABLE

TELIT VERTICAL EXPERTISE





INTEGRATION IN AUTOMOTIVE – DRIVING TOMORROW'S CONNECTED CAR





Among the m2m connected industries, automotive is arguably one of the earliest adopters – and it is poised to remain the fastest growing segment for years to come. Moreover, as drivers become more immersed in the connected lifestyle, expectations from the connected driving experience are on the rise. That's why Telit has spent the past year focused on integration for the automotive space.

TEAM INTEGRATION

In April of 2014, Telit completed the acquisition of NXP's Automotive On-board Platform (ATOP) in order to expand our offer to the automotive OEM (original equipment manufacturer). Upon completing the acquisition, we established Telit Automotive Solutions to unify the resources of the two companies and launch an accelerated drive towards market leadership in this segment.

With the acquisition, the Telit automotive team was joined by a group of experienced engineering resources with deep relationships and understanding of auto OEM needs. Team integration is a challenge in any acquisition, but the Telit and ATOP team demonstrated their commitment to the customer first in joining together to introduce our first new commercial product within just two months of the closing.

PRODUCT INTEGRATION

The Telit ATOP product itself is a monument to functional integration. The ATOP 3.5G simplifies the development of automotive applications such as road pricing and eCall thanks to its unique combination of all required technologies, including: 3G cellular connectivity for voice and data communication; GPS/GLONASS for location, and near-field communications for driver authentication or to facilitate mobile payments directly from the car.

In addition, the ATOP 3.5G offers unparalleled processing power, thanks to three onboard processors. An application processor runs Java J9 Virtual Machine for simple code creation and portability. A dedicated interface processor manages vehicle interface using a choice of technologies including CAN, USB, Ethernet, UART and ADC. Plus, the optional SmartMX smartcard CPU with Java card JCOP OS provides embedded, hardware-based security for rock-solid fraud prevention and data integrity, suitable for end-to-end transaction systems requiring Common Criteria level 5+.

Supporting an industry leading range of features from a single package, ATOP 2.5G, and the new 3.5G are a perfect complement to the rest of our ONE STOP. ONE SHOP. products and services offer, designed to make the integration of connected functionality easier than ever for Automotive OEMs to adopt and commercialize.

GO-TO-MARKET INTEGRATION

Solutions based on dedicated automotive modules will continue to be the route for many vehicle manufacturers. Telit has also accelerated development of existing product lines, including the GE910-AUTO, HE920, LE920, and UE910-AUTO. By putting all our automotive-focused products in the hands of a joint team that truly understands the challenges of the automotive marketplace, we are able to deliver an improved experience to automotive OEMs, Tier 1 automotive suppliers, as well as telematics customers the world over. Moreover, by applying common quality and manufacturing processes around the world, we are able to leverage our automotive expertise to delivery unmatched quality and reliability even to our customers in other industries.

Telit has been active in the automotive market for several years, all the while amassing a vast knowledge base as well as a considerable amount of operational experience in this industry. In addition, we have the global reach as well as the various support services needed to facilitate the marketing and deployment of ATOP-centric solutions.

Back in 2009, Telit created dedicated sales and support teams that could function locally and, at the same time, be managed on a regional and global basis by senior Telit specialists. Telit Automotive Solutions employs the same model. It operates in a global ecosystem comprising a direct sales force and value-added distributors with detailed local knowledge and expertise. Everything is matrix-managed so that Telit is not only close to its customers, but becomes an integral part of their market operation.

A HUGE MARKET

It is hard to exaggerate the potential of vehicle telematics: nearly 82 million total available market in 2013. Take up of telematics solutions is still very low (only about 16 million connected vehicles in 2013 according to IHS), which means there is a huge untapped market. This situation will change and government legislation is a key driver. There is the ERA-GLONASS initiative in Russia, Contran 245 in Brazil, e-Call in Europe, and now the U.S. Dept. of Transportation potential mandate on connected-car collision avoidance systems. The Telit next-generation platform enables the development of consolidated solutions. We are tracking market pull for low-cost, but more sophisticated platforms that will allow the hardware and the related data plans to be shared with the various telematics solutions. ATOP has the requisite functionality. Look for a 4G ATOP solution and additional functional combinations in the coming months and years.

CONCLUSIONS

Telit is an established supplier of automotive-grade modules, but given the size of the market and its potential, Telit decided that a dedicated business unit would allow the company to better address all those opportunities. This focused approach would also facilitate the execution of our strategy, which is to become the market leader in the automotive segment by 2015. Our year of integration should therefore be seen as a significant step towards the realization of that objective.

HACKING INTO THE CONNECTED CAR? NOT IF TELIT IS ON-BOARD.



Dirk Reimer,
VP Sales & Marketing,
Telit Automotive Solutions

Wireless connectivity is among the features enjoying the fastest adoption rates in the car industry. This is driven by a number of day-one use cases like eCall & concierge services, remote car management and monitoring, traffic messaging any many more simple, low-data rate applications. Looking forward, to realize the vision of the autonomous driving car, wireless connectivity becomes a must-have feature to continuously feed the latest – almost real-time information – into those self-driving cars. For these use cases, data rate requirements will drive the integration of new cellular technologies like LTE and LTE-advanced in parallel with today's mainstream GSM/GPRS and 3G technologies. Next to long range cellular, new shorter range wireless V2X is emerging as a next wave of new standards rising in adoption

plans by the industry to provide car-to-car and car-to-infrastructure connectivity.

Today, we see cellular-based wireless connectivity typically implemented in a first-wave of fast deployments across a large range of models in most OEMs as standalone boxes, which are directly connected to in-vehicle networks (IVN). These are presently, in most cases, the CAN bus but going forward they will evolve into faster nets like dual wire Ethernet or even faster standards.

It is well known that CAN bus systems are largely unsecured and hence, easy targets for hackers. In the past CAN networks could only be manipulated if the attacker was physically present at the car to open the door and connect to the IVN. Today with mobile network technology already integrated inside the car and directly connected to the IVN, the car presents a virtual door which is accessible from anywhere on the internet. Of course connected cars today still do not have a permanent internet IP address and are not as easily accessible as connected computers. But their mobile phone numbers can be relatively easy to harvest, for example using an IMSI catcher that can then be used for dialing into the car's connectivity hub. These kinds of attacks have been successful and reported by media along with a number of other hacking techniques.

As a result, we are seeing many industry players starting to implement countermeasures in their solutions to prevent such attacks, using industry standard methodolo-

gies like strong authentication by certificates or secure keys, encrypted communication, message filtering and many other techniques paired with their counterparts on back end systems in order prevent, or more accurately, extend the time before an attack becomes successful. Unfortunately there is still a strong belief in industry that security by obscurity is the best and safest way forward to prevent malicious attacks on technical systems. Security experts and the security industry have demonstrated for many years that the best way forward to ensure the highest level of security goes through open assessments of security systems; and that in general, security is a race against time which can only be won with constant innovation.

Telit is now able to offer customer the first truly embedded solution with a full security concept. The ATOP 3.5G implements a number of measures allowing customers to build secure end-to-end connectivity. Central to this security apparatus is a secure element allowing customers to store keys or certificates inside the communication module. The use of secure elements is the preferred, trending solution used in contemporary smart phones offering secure payment services. The solution used in ATOP is based on NXP's SMX technology which is widely accepted as state of the art. The secure element includes banking-grade security level CCL level 5+ facility currently used for secure transactions. Telit is able to offer a full-trust provisioning chain allowing customers to take total responsibility and ownership for managing and protecting the secure element.





Carlos Perez,
EVP Global Sales, Telit

TELEMATICS AND THE IOT

TELEMATICS: RELEASING THE PARKING BRAKE NEW BACK-END PLATFORM OPENS UP THE MARKET

The core competence of Telematics Service Providers (TSPs) is an offer comprising one or more applications, not so much on hardware or back-end infrastructures. However, a typical solution involves the vertical integration of these three components. That has resulted in a fragmented market and a penetration rate that does not reflect the potential and economic importance of this sector.

How can we change that scenario? As in many other sectors of our high-tech economy, the key that will open up the market is one that will allow telematics applications

to run on open platforms. That is the PC – smartphone model. Easy to state, harder to realize; but doable, as shown in figure 1.

Employing modules for telematics applications from Telit’s ONE STOP. ONE SHOP, enables seamless connectivity to a comprehensive portfolio of back-office, cloud-centric services. This means that TSPs, established vendors and new entrants, can focus on the apps, which are their core competence. It also allows hardware vendors to ship aftermarket devices that can be demonstrated almost immediately, thereby accelerating time-to-market.

The GE866 (2G) and UE866 (3G) cellular modules were specifically created for deployment in dongles, where real-estate space is very limited. Despite a wide range of application possibilities, they are not generic products: the design reflects detailed discussions with TSPs and hardware vendors as well as the knowhow and experience of Telit telematics specialists. GNSS functionality is supplied by the ultra-compact SE868 V2.

Figure 1 depicts a unique concept, a value proposition that brings all the hidden pieces of a telematics solution together and enables fast, easy implementation of a TSPs’ service offer. This means that their focus can be on the apps and marketing their offer.

Figure 1: Cellular, GNSS and RF modules are embedded in the hardware. They enable seamless connectivity to an open platform that runs a robust set of m2mAIR value-added services that are hosted in the cloud.



THREE TAKES ON THE VALUE PROPOSITION

The market divides into three categories: (1) hardware vendors; (2) new TSPs, i.e. entrants and (3), established TSPs. Requirements in each category vary, but the objective in all three is the same: open up the market and deliver telematics services that capture the demands of the current and upcoming, increasingly connected worlds.

Hardware vendors: in order to market their products these companies need to establish a business relationship with a TSP and that can only be realized after the product's performance has been evaluated. Let's take a hypothetical but realistic scenario: a vendor located on one side of the world approaches a large insurance organization that's on the other side.

Evaluation would involve purchasing a few SIMs and setting up a Web service that would track the products. That's too much of a hassle for a large corporation.

This means a lot of vendors are effectively locked out of this sector, even though they may have innovative, competitive devices. However, when they embed Telit m2mAIR SIMs inside their devices, as shown in figure 1, they can employ the Telit starter kit in order to log on to a demo site. This can be done in a few minutes – it's a hassle-free process. The prospect would not only see that the hardware works, but they would also witness the advanced functionality of our back-office services, e.g. locations shown on Google maps.

Experience. Focusing on this part of the solution allows new TSPs to differentiate their offer. Whether they want to design their own device, or outsource it from box vendors, when Telit m2mAIR SIMs are embedded in the device connectivity to the open platform will be established: this is a seamless process and it eliminates the need for TSPs to create their own back-end infrastructure, which would be an expensive, time-consuming exercise. In addition, Telit's m2mAIR infrastructure features a robust set of m2mAIR value-added services that are hosted in the cloud, as well as seamless connectivity to leading MNOs, national and international. Therefore time-to-market is cut to the bone.

This represents an impressive combination of different technologies that will allow new entrants to offer equally impressive solutions. It also a unique value proposition, a plug and play solution that validates our ONE STOP. ONE SHOP. brand.

Established TSPs: It's clear that established TSPs have everything they need to operate a service, but in many cases their back-office system would have been designed three or more years ago and that is a long time in high-tech circles. Issues can arise, e.g. scaling the solution or increasing the security. Migrating from a proprietary solution to our open, cloud-centric platform removes these constraints and it also allows these TSPs to focus on expanding the functionality of their offer. In addition, they may want to expand into new geographic markets or better coverage might be needed in their domestic market. This requirement can be realized using m2mAIR SIMs, which as indicated in the previous section, enable global connectivity as a result of agreements with leading MNOs.

New TSPs: new entrants want to focus their resources on the front-end application. This is what customers see and expect.



Telit services connect your solution

A WINNING COMBINATION

MULTI-SOURCED GNSS CHIPSETS AND MANUFACTURING EXPERTISE

We are entering an era in which easy access to location-based information is something we take for granted. In the consumer sector applications based on the user's geographic location will answer three questions. Where am I? What's around me? How do I get to where I need to be? And in the case of emergency services, how do others get to me?

Today we see location-based services that cover: public transport; public works and civil engineering; immigration and border control; police; monitoring of prisoners; environmental management; medical and people with disabilities applications; sports; tourism; waste disposal, etc. However, it's

clear that we are going to witness an even wider range of location-based applications in the future – many of which will be tailored to meet the needs of specific market niches and individuals. Example: the emergence of wearable IoT products such as smart watches enabled by ultra small GPS receivers.

Opportunities for innovation abound and chipset technology is evolving to meet the market's fast-changing requirements. Solutions should therefore employ GNSS chipsets that have leading-edge technology and at the same time solutions should be future proofed. It's a tall order, but one that Telit is fulfilling every day.

Telit employs different GNSS chipsets, thereby ensuring that we always offer leading-edge solutions tailored to meet specific customer requirements. The chipsets are integrated in different module families that have the same footprint, electrical and logical interfaces, but which employ different radio access technologies.

Telit's Unified Form Factor brings significant benefits. For example: reuse of the customer's board; easy integration with other cellular modules because the GPS commands are already integrated in Telit's AT command interface; and easy migration to different GNSS technologies on the same board with some mount/no-mount options. This concept also allows solutions to be future-proofed; modules can be exchanged in line with changes in the marketplace. Check it out.

PARTNERSHIPS

Our GNSS offer is based on a winning combination of strategic partnerships with leading edge chipset companies and our global module manufacturing expertise. These partnerships enable the best chipsets of the moment to be employed in our modules. This would not be possible if Telit was vertically integrated – if we owned and employed our own GNSS chipset technology.

UNIFIED FORM FACTORS

Telit is the first and, to date, only module manufacturer to offer its customers a "standard" form factor and family concept. All modules in a family have the same form factor and functionality – the same size, the same shape, the same connectors and the same software interface. This is a key Telit benefit since it means that GNSS OEMs can design and manufacture a "generic" board and incorporate or exchange modules in line with changes in the marketplace. This is the way that we future-proof our products, which was an important part of that earlier tall order.

ENABLING OPTIMAL SOLUTIONS

OEMs only need to design and manufacture one printed-circuit board (PCB): the platform that provides the requisite location-based service is the module; different chipsets do not need to be placed on the board. Therefore development efforts and time to market are reduced. In addition, different GNSS solutions can be marketed on the same footprint.



Felix Marchal,
Chief Product Officer, Telit



A COMPREHENSIVE PORTFOLIO

The **Jupiter SL871** is the smallest multi-constellation GNSS module in the Telit portfolio. It is designed for global compliance with the whole set of GNSS constellations, those that are in place as well as constellations that are being deployed.

Jupiter SL869 V2 is a member of the SL869 family. This module simultaneously tracks GPS + GLONASS or GPS + Beidou and it is Galileo ready. The combination of GPS and GLONASS provides an accurate location service. **Jupiter SL869 V2S** is designed for easy migration between a full-GNSS solution for top-ranked applications and a simple GPS-only solution for less demanding applications. It is pin-compatible with the ultra low power, GPS-only variant of the Juniper SL869-V2.

Jupiter SE868 V2 is a hybrid positioning system that combines GPS, GLONASS, and SBAS to provide a high performance position reporting and navigation solution. It supports ephemeris file injection (A-GPS) as well as Satellite Based Augmentation System (SBAS) to increase position accuracy.



The **Jupiter SE880** is an ultra-compact (4.7 x 4.7 mm) GPS receiver module that employs 3-D component embedding technology to achieve best-in-class performance, particularly for size-constrained applications in the commercial, industrial, and consumer segments, including wearable and handheld devices.

The breadth and depth of this portfolio illustrate Telit's commitment to the ONE STOP. ONE SHOP. concept. We reduce time-to-market, risk and cost, providing everything that is needed to bring innovative solutions to market except of course, the expertise and knowledge of our customers, with whom we will never compete.



SL871-S
Compliant with GPS and QZSS standards; Low power processing core delivers current optimized tracking; Satellite Based Augmentation System (SBAS) compliant



SL869 V2S
GPS module based on the low power consumption Mediatek MT3337 core. Low power navigation allows the best balance between accuracy and battery life.



SE868 V2
Compliant with GPS and Glonass standards; Low power processing core delivers current optimized multi-constellation tracking; CSR SiRFstarVTM based



SL871
Smallest multi-constellation GNSS module in the Telit portfolio; Compliant with GPS and GLONASS standards; Compliant with Compass / Beidou; Ultra-sensitive -165 dBm (tracking) RF front-end.



SL869-DR
Dead Reckoning navigation engine provides navigation solution in difficult or even no-fix scenarios.



SL869-T
Timing SW provides a precise and stable time base for those application requiring precise time reference.

GPS

GNSS



Emmanuel Maçon-Dauxerre,
Senior VP Sales EMEA, Telit

TRENDS IN THE UTILITY MARKET

COMMUNICATIONS TECHNOLOGY SET TO REVOLUTIONIZE METERING

The global utilities market is fragmented and composed of companies with profoundly different heritages and meeting a broad spectrum of end user requirements. Communications technology has the potential to revolutionize metering for the first time in more than a century, increasing efficiency for the utilities and allowing consumers to better control their usage.

Electricity meters were a revolution at the beginning of the last century but since then there has been little significant change. Today we speak

of smart metering and smart grids, but the real difference comes from better connectivity, which creates an environment fostering innovation. The development of apps that allow consumers to manage their consumption and power down their homes remotely on an iPad or smartphone however, has to be preceded by large-scale deployment of smart meters.

With them, consumers can get real-time, accurate information on usage. Utilities also benefit; there's less cost and error because reading is automated. This is particularly beneficial in countries that have seasonal differences. Differences are less pronounced in the US where winter heating consumption turns to summer cooling consumption.

The need to have accurate billing without manual reading isn't new. The utilities have been doing this since the 1980s. In the US, for example, radio frequency technology was deployed to enable power companies to perform drive-by meter reading. The difference this time is the fact that advances in communications technology provide for bi-directional exchanges of information: not only from the meters but also to them, e.g. issue a command to switch off or change the tariff.

When apps are brought into the equation the result is remote interaction between the meter, the utility and the consumer. As with all resources we expend in our daily lives, so is energy becoming target of more waste scrutiny at the same time that demand increases to power an ever rising number of autonomous devices. Uses such as charging electric vehicles place a substantial load on the power grid. Therefore encouraging users to consume more intelligently creates a win: win scenario.

CHANGES IN THE INDUSTRY

Prepaid usage is a good way to engage non-electricity users in developing markets and it has been useful in industrialized countries such as the UK, where there is a base of prepaid users probably related to the turnover of rental property tenants. Current solutions are not elegant and require users to charge up prepaid keys or cards with cash. In addition administration costs are substantial and they are passed on to the consumer. However, with a smart meter, the utility can easily connect and disconnect customers. Therefore prepaid should be an option that is only employed in special situations.

What has changed a lot in the traditional landscape is the fact that utilities used to do everything, from power generation to distribution and billing. Now the provider, the company that interfaces with the consumers, may only do the billing. This development is the result of legislation to create more competition.

BARRIERS TO PROGRESS

The large legacy infrastructure does present a barrier. Nationwide rollouts can involve tens of millions of homes and it's easier where there are only one or two providers. When there are more and there is no government involvement, deployment is slow.

A key barrier is the cost of replacing meters. The fragmented nature of the market means that some providers will want to do

this themselves while others will employ the service of a mobile network operator. Every country is and will be different because of their historical position.

WHAT IS TELIT DOING?

We understand that this market will remain fundamentally heterogeneous so we have developed a range of modular solutions to address that. In addition to our well-known cellular modules, short-range and GNSS modules help smart grid applications with specific needs, e.g. in Brazil where GPS is required for meters.

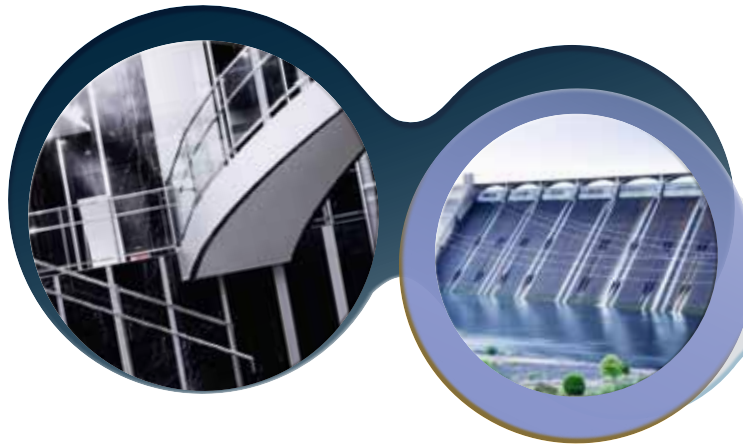
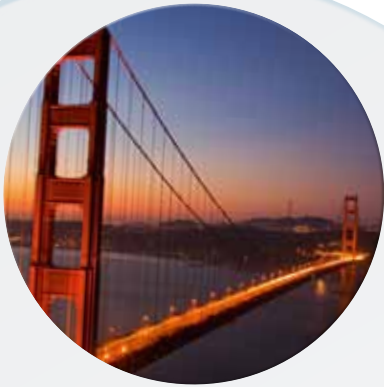
Some of the wireless network types employed or considered by utilities globally include CDMA, EVDO, 2G, 3G and 4G, WMBus, ZigBee and SigFox – all of which can be found in the Telit portfolio. Along with the modules, our ONE STOP. ONE SHOP. sole-sourcing model includes the necessary spread of services required to provision and control

cellular connectivity, manage deployments under mobile networks and integrate meter data with the utility systems and cloud data.

Utilities and system integrators working for them have a tough road ahead. ONE STOP. ONE SHOP. is a powerful weapon they can use to stay focused on the complexities of developing solution roadmaps and rolling them out while substantially reducing the risk associated with the Internet-of-Things element of their solutions.







TELIT GLOBAL STRENGTH

- ONE STOP. ONE SHOP. uniquely delivering broadest portfolio of modules, integration and value added services to connect devices to the IoT
- Integration assistance and support delivered through service offices in your time zone and in your language
- One of a kind Technical Forum open to all those with interest in integrating m2m connectivity for the IoT
- Global logistics capable of supporting manual or automated single or multi-point customer order/supply systems
- Largest set of ready to use technical documentation for m2m/IoT integration
- Industry leading combination of integration assistance equipment and trained personnel
- Analyst named BEST security in m2m/IoT data services and application enablement *(ABI Research 2013)
- Mass-customization capabilities throughout products and services
- Respected active member of top industry associations and standards organizations globally
- Capable of full compliance with supply and quality requirements for Enterprise grade, Automotive & IT OEM deliverables

UPDATE EMEA



Emmanuel Maçon-Dauxerre,
Senior VP Sales, Telit EMEA

Despite challenges in the 18-country Euro economy, Telit managed to grow in the industrial sector compared to 2013, reaffirming our leadership in this established, robust sector. In the second half of the year it became clear that the European economy would be quite certainly re-entering a recession. The IMF (International Monetary Fund) indicated in Q3/2014 that the Eurozone's chance of this happening had roughly doubled to nearly 38% from April 2014 levels.

In the EU, we are feeling the impact of conflicts in Ukraine and Ukraine-related sanctions against Russia, which affect not only the economy and projects in Russia, but also in the countries exporting to Russia. Under these tough economic circumstances beyond our control, realizing growth in sales represents a very positive financial result.

In the United States, 2G networks are being retired and the ensuing shift to 3G and 4G modules has resulted in high-volume sales

commanding higher revenues. But in Europe 2G continues to be the preferred option for m2m traffic. One interesting development is the CDMA450 network that Alliander (one of the three major utilities of the country) is deploying in the Netherlands and the subsequent deployment of CDMA modems by utilities for smart metering. Telit is particularly well positioned to take advantage of this rising opportunity.

LOOKING AHEAD

Looking forward into 2015, we can expect a modest improvement in the economic climate in Europe and this should result in a probable restart of large projects that were put on hold – maybe for 2016. However, we will see the company's strategic initiatives making a significant impact on our leading position in the m2m / IoT marketplace. Telit has been promoting its ONE STOP.ONE SHOP. offer for some time and we are starting to see acceptance of this innovative value-added concept in the marketplace.





The acquisition of ILS Technology in September 2013 was particularly significant. It allowed the company to create edge-to-cloud data connectivity solutions for our customers, modules at one end and m2mAIR Cloud at the other. m2mAIR Cloud is a Platform-as-a-Service (PaaS) offer that allows customers to collect data from any device and integrate it directly into enterprise-systems for big data analytics. In a nutshell it moves data directly from machines to decision makers and this is a key requirement for the industrial sector.

Synergistic combinations of these core capabilities enable our customers to market solutions that set new performance bars and that deliver compelling functionality. Example:

cloud-ready modules that provide near-seamless connectivity to the m2mAIR Cloud and its portfolio of value-added services. This is a unique capability; one that will allow Telit to leverage the potential created by cumulative module sales of over 100 million by 2018 and become the leading provider of cloud-centric m2m services.

I expect 2015 to be a transition year in which enterprises, as well as businesses both large and small, will employ cloud-centric services in order to enable the development and deployment of IoT solutions to their customers. Therefore 2016 looks set to be a very good year for the company and our customers, who number over 5,000 worldwide.

NEW ORGANIZATION

I moved into my new position in April 2014 and took an early decision to create a new sales structure comprised of five regions: DACH (the three German speaking countries), Eastern Europe, Middle East and Africa, Northern and Southern Europe. This structure brings the relevant individuals in our sales team closer to their customers and it also drives much faster issue resolution boosting customer satisfaction. This structure is also needed to better understand regional needs, as EMEA is a fragmented region with many different cultures and expectations.



UPDATE AMERICAS



Michael A. Ueland,
President, Telit Americas

Since 2008 when I wrote my first entry, we have seen significant growth in the Americas region. In fact, we sell as many units in two weeks now as we did in all of 2008! We have also seen a significant number of customer success stories that have created strong value for our customers as well as successful liquidity events for their shareholders.

In 2009, I spoke about moving from m2m 1.0 to m2m 2.0 which I characterized as the growth of more consumer driven m2m applications (like home security, UBI, etc.). We have seen that growth play out. For instance, there has been significant growth in usage based insurance (UBI) where we have gone from a handful of states to 50 US states which have approved UBI programs. In a recent Towers Watson study, the number of consumers who have, or had, a UBI policy in the past 17 months has nearly doubled, from

4.5% in February 2013 to 8.5% in July 2014. Considering there are approximately 200 million passenger vehicles operational in the US (US DOT), you can see we have seen tremendous growth in this application area.

Another area of growth has been home security. Traditional home security systems (1.0) have morphed into home automation systems (2.0) that not only allow consumers to control their security systems from their smartphones, but also allow them to change their thermostats, unlock doors, close garage doors, discover water leaks and turn off lights. Growth in this space has not only come from traditional suppliers of security systems, such as Tyco, ADT, Honeywell and others, but also from new entrants such as Alarm.com, Nest and AT&T. Applications such as child locators, activity bracelets, and elderly parent monitoring are



extensions of home automation and are part of the larger connected lifestyle ecosystem of solutions.

Many of the obstacles that existed for developers of m2m products in 2008 still exist today but conditions have improved significantly. For instance, Mobile Network Operators (MNOs) have created business units around the Internet of Things (IoT) and are in a much better position to support companies developing m2m and IoT solutions. The introduction of LTE by Verizon and AT&T has required that MNOs look at how best to deploy the precious frequency spectrum they control. And with AT&T's 2G network "sunset" program in full swing, CDMA-1xRTT remains the only option for new 2G deployments in North America. With Sprint & Verizon publicly stating their long term support for those networks (2020 and beyond), for

many applications having a lifespan of 5 years or so, CDMA 1x remains a viable technology considering the low data rates required for m2m. Network technology evolution is not moving as quickly in Latin America, with GPRS still being the predominant network technology used for m2m. However, recent LTE 2.5 GHz spectrum auctions in Brazil should help increase the pace of the roll-out of LTE by the major MNOs (Vivo, Claro, TIM, and Oi), likely resulting in a limited role for 3G in m2m.

But what is exciting for me today are the developments around LTE category zero technology ("Cat 0"). Hopefully, we will soon have agreement on the Cat 0 standard and chipset developers will be able to start development. Although it is likely we won't really start to benefit from Cat 0 technology until 2017, it promises to be the first network technology designed with IoT/

m2m in mind. Delivering lower power consumption, low latency, a true all IP system – which provides many network benefits, cost reductions and improved network coverage, Cat 0 will help provide a single network technology that can be truly a "long term" global solution which is important to customers trying to deploy products with lifespans longer than Smartphones.

Many of the early challenges of developing m2m solutions are gone. And Telit has really helped reduce time to market with the work of more than ten years culminating in the ONE STOP. ONE SHOP. Combined with strong growth in advanced network technologies like LTE and LTE-Advanced, there is a bright future for developers of IoT solutions who can use connected technology solutions to solve problems for both consumers and the enterprise.



UPDATE APAC



Derick Tsang,
President Telit APAC

2014 was a stunning year for Telit sales in Australia. Not only did we realize record sales, but also several new key customer projects ramped up at breath-taking pace that exceeded all our expectations. Australia has become one of the key sales countries in the APAC region. With carriers moving to LTE in the next few years, many more new opportunities are expected to open up for Telit.

Despite fierce competition in the AMR segment in China, we have successfully carved out a niche in several key vertical segments like Telematics and POS. As a result, we achieved an increase in sales of over 30% compared to 2013. In the fast growing China Automotive segment, following the acquisition of the NXP ATOP business this year, we are engaged in several key automotive projects and are responding to an increasing demand for the ATOP products. A couple of projects are in the final stage of testing with rollout planned to start in 2015.

Telit sales continue growing in India, breaking records three years in a row. The new Indian government has made additional investments in the Automotive, Energy, Telematics, and Micro Finance segments and this is expected to drive additional m2m growth. Telit India has been successful in engaging with the three leading automotive OEMs for their telematics devices. In addition, Telit India has design engagements with most of the key handheld POS manufacturers. These projects are well positioned for growth that is driven by the new government investments.

In 2014, the most important changes in m2m market in Korea were nationwide LTE network service deployments and growth in the automotive sector. Korea has been a pioneer in new technology adoption for mobile networks widely used in m2m communications. Korean operators have completed expanding

their LTE networks and nationwide coverage was achieved in 2014. In addition, the development of ultra-high-speed services and new content for LTE networks has been progressing.

Automobile manufacturers and global companies operating in the automotive sector have developed new solutions driven by the need for eCall and expanded Telematics services. The automotive industry is the key growth driver for our Korean business in the next few years. In 2014 Telit added an LTE module to its automotive-grade m2m portfolio. With our vast experience in the global automotive m2m

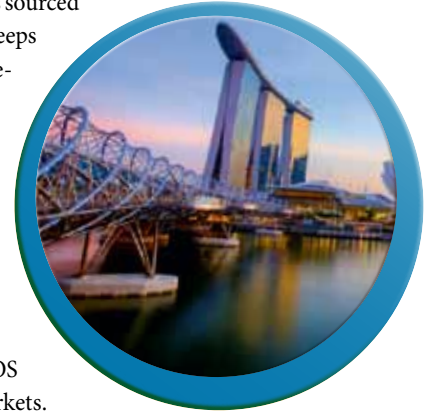
market, Telit has successfully engaged with the leading automobile manufacturers and global automotive companies.

2014 was also a very exciting year for Taiwan and SEA (South East Asia), where we achieved record sales in 2014. We made great progress and penetrated several overseas market segments in Smart Home Gateways and POS terminals with key OEM/ODM customers. In addition, we have expanded our sales network in SEA in pace with the fast growing economy of the region. As a result, the SEA business in 2014 has more than tripled compared to 2013.

The importance of products sourced with value added services keeps growing steadily in the region propelling the Telit ONE STOP. ONE SHOP.

Cooperation with key mobile network operators in APAC continues growing and establishing new and exciting value enhancing formulas to expand the OSOS model in our dynamic markets.

We look forward to pushing the limits of business models as mass adoption takes root across all our top vertical industry segments in the coming years.



ADVERTISEMENT

 **Automotive**

Tracking Automotive Technology & Innovation

We cover the evolving automotive technology segment as it converges with consumer electronics, mobile and IoT to re-define connectivity, mobility and autonomous use-cases.

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TELIT SOLUTIONS

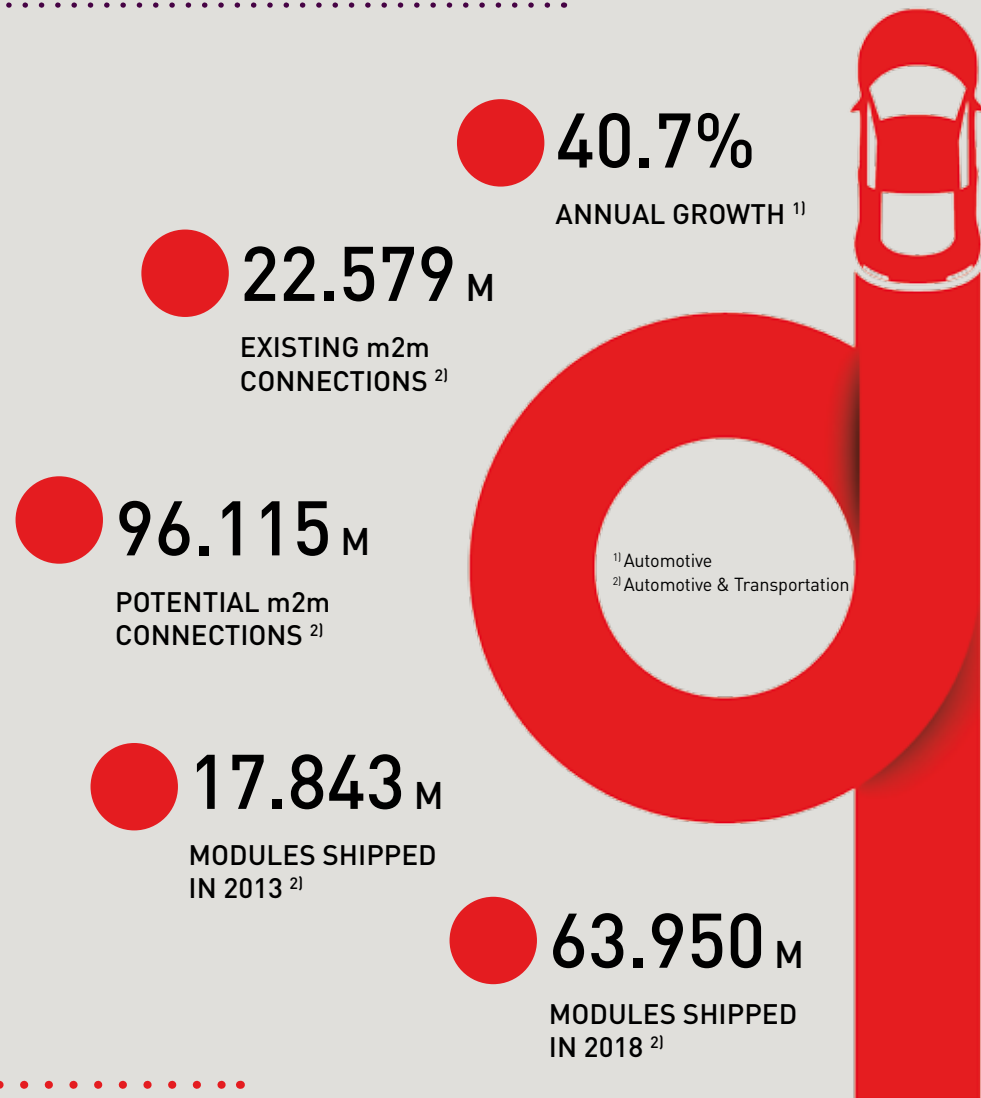
FIT FOR ALL VERTICALS



TRANSPOR



TATION



Source: IHS
© 2014

“Automotive will be the critical vertical market in the near future. Consumer automotive will account for over 40% of module revenues by 2018. Automotive will also represent far and away the largest user of 3G and 4G technologies” (Source: ©2014 IHS Technology). “The number of subscribers to On Board Diagnostics (OBD) after-market telematics solutions is expected to increase from 9.5 million in 2014 to 117.8 million in 2019” (Source: ©2014 ABI Research).



ENABLING THE CONNECTED CAR

FACTS

Automile AB

<http://automile.io/pro/>

● System

Automile Pro – electronic vehicle trip logger

● Which Telit module do you use and why?

GE865 – due to its reliability

● m2mQIF Mobile

m2mAIR Mobile – due to its comprehensive service offer

● Benefits

Automile PRO is an electronic vehicle trip logger with insightful analytics that give businesses all the tools needed to manage fleets while saving money from day one and ensuring tax compliance. Available in 53 countries.

Automile Pro



Providing a proven m2m communication foundation and deep understanding of our business DNA has made Telit the provider of our choice. Jens Nylander, VP and Co-founder of Automile AB

Automile AB is a Swedish start-up based in Stockholm, which has created a telematics platform with the Internet of Things in mind. Called Automile PRO, it reinvents fleet management for businesses by connecting with their vehicles and driving data via a smart cellular based OBD II device, which is available in 53 countries. The company has partnered with Telit Wireless Solutions and uses the Telit m2mAIR Mobile Core service to provide network connectivity and ePortal management for the connected car platform.

The flexibility of the rate plans and the simplicity of the ePortal subscription management tools, gave Automile a competitive advantage that closed a deal for its connected car platform with a leading international car manufacturer valued at more than US\$4 million.

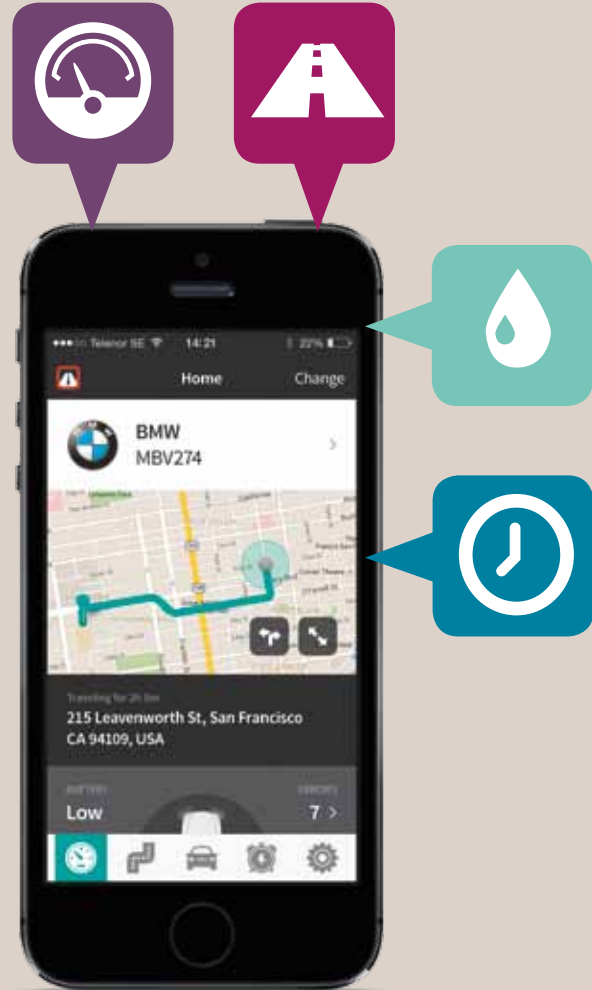
The agreement follows another milestone deal closed earlier this year with a leading aftermarket auto parts provider, reinforcing the offer's value and product differentiation in the fleet management market.

Automile conducted an extended market assessment of m2m technology providers and selected Telit for the technical superiority of its m2mAIR Mobile offering, together with its understanding and flexibility in collaborating with high growth companies like Automile.

In addition Automile Pro is based on Telit's GE865 modules, which ensure secure data transmission.



Automile AB, a private company, Swedish startup based in Stockholm and established in early 2013, is aiming to build the best platform to connect you, vehicle driver and owner, with your vehicle's data.



Telit embedded



GSM | GPRS
GE865

GE865 - due to its reliability





FLEET ROBO – A VEHICLE TELEMATICS PRODUCT/SOLUTION

FACTS

Inxee Systems & Binary Semantics

www.fleetrobo.com
www.inxee.com
www.binarysemantics.com

● System

Fleet Robo end-to-end fleet management solutions

● Which Telit module do you use and why?

GL868-Dual GPRS module and JN3 GPS module deliver high quality at a reasonable cost and Telit provides good technical support.

● Benefits

Fleet Robo offers industry specific fleet management solutions that are designed to enhance operational efficiency and business productivity. Our solutions optimize the usage of shared resources by automating the relevant business processes.

fleet robo
Fleet Management Solutions



Inxee Systems offers embedded and VLSI design, development and manufacturing services. Binary Semantics offers Fleet Robo and Insurance products in the automotive segment, and IT software design and development services. Nate Srinath Nudurupati, Director

The next big thing after consumer electronics, computers, and mobile phones is the "Internet of Things". We are pleased to be a part of this industry, with our focused products and services. Fleet Robo product and solutions offer to the vehicle telematics segment a whole new dimension to the capabilities of the automobile, transportation and logistics industry. This segment is poised to provide enhanced safety, security, convenience, infotainment and productivity. Our Inxee embedded hardware and software services allow our customers to quickly deploy all kinds of IOT devices and services to various segments, such as automotive, medical, automation, defense, national security, consumer electronics, and green energy.

Vehicle Telematics, an IOT application, is an ecosystem in which real-time information and data available in vehicles, business servers or home servers are brought together seamlessly to provide rich and rewarding experiences to businesses and/or home users. Vehicle telematics has already evolved from "plain vanilla" location data for vehicle tracking or navigational applications to enterprise applications that harness data and analytics.

* Fleet Robo E2E Fleet Management – Our Telematics Application www.fleetrobo.com

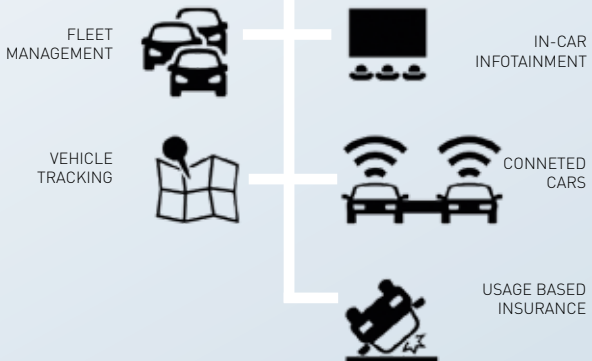
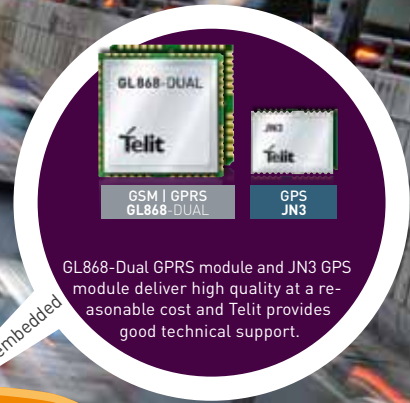
Our automation of fleet management serves the following segments: taxi fleet management, trucking and logistics, employee transportation and school transportation.

* Fleet Robo VTS – Our Vehicle Tracking System

Fleet Robo VTS is a compact solution for remote vehicle tracking. It offers an easy-to-use mobile and web applications platform having an intuitive user and admin interface with detailed reporting and monitoring capabilities.

* Inxee – Our Embedded IOT Design Services www.inxee.com

Inxee offers complete embedded design, development and manufacturing services to clients in various IOT segments. Services span various hardware segments such as PCB, ASIC, FPGA and software segments such as firmware, OS, application development.



Inxee [in-ex-see] Systems, is an international embedded systems and semiconductors company delivering quality development, manufacturing and support services across various embedded segments.



- School Buses
- Passenger Transport
- Delivery Vehicles
- Oil & Liquid Tankers
- Heavy Machinery
- Dumpers & Loaders
- Goods Movers
- Ready-Mix Trucks
- Trucking & Logistics
- Police & Public Safety



ENSURING TIMELY DELIVERY OF READY MIX CONCRETE

FACTS Road King Technologies Inc.
www.roadkingtech.com

● System

GPS tracking units, used to automate cement mixers' fleets

● Which Telit module do you use and why?

The HE910 cellular module helps us deliver critical fleet data to the cloud. The JF2 gives us accurate location data

● m2mQIR Mobile

We use m2mAIR Mobile in units that operate outside Canada. They only charge us for active units and the data they use.

● Benefits

Using the RK3000 to monitor each mixer, Road King provides an easy-to-use suite of cloud-based data collection, visualization and data archiving tools to provide unparalleled insight to this unique group of fleet managers.

RK3000



We save as many as eight truck rolls a day.

Claude Dupuis, VP Engineering & Operations

Our main m2m market is the Ready-Mix concrete industry, where our m2m solution gives the Ready-Mix producer a decided advantage via increased efficiency and productivity.

Most of our clients, like LaFarge for example, own plants where the concrete is prepared. They also own fleets of trucks that continue the mixing and production as they deliver the ready-mix concrete to their clients.

Our m2m product is an embedded data collection computer. It automatically collects truck operational ready-mix information and uploads it to our cloud servers every 30 seconds. Our clients see full details on each of their wired trucks in near real-time, using nothing more than a Web browser on the Internet. Even our clients' customers can obtain access in order to see their order status. This enables easier delivery coordination for large sites where more than one concrete supplier is required.

Our m2m data collector measures and records a number of parameters continuously, which it then uploads to our cloud servers. This gives the producer's dispatchers full insight on the delivery process.

Since the dispatcher now has a clear view of all deliveries, more orders can be taken and delivered each day. This increases company income without adding more trucks to the fleet. We also keep full

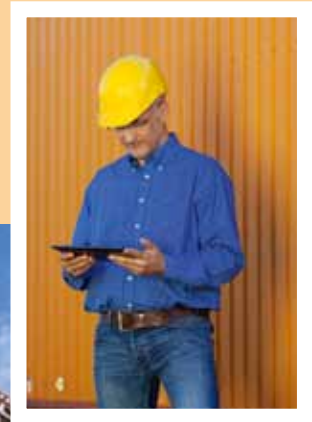
logs of each delivery and archive it all for ten years. Many clients have used those logs to protect their company from abusive lawsuits.

Payback for most clients has been less than 18 months, thereby providing a great ROI (Return on Investment). For some it was the difference between staying in business or not. A client in Maryland called our m2m solution the best 'mouse trap' in the business.

Road King Technologies was started nearly a decade ago, but just over four years ago we designed and built our first complete m2m solution using Telit modems. Our present generation 5 uses a Telit 910 family modem for m2m communications and JF2 GPS for tracking. We also use m2mAir Mobile in our units in some international markets



Road King Technologies started operations nearly 10 years ago. It was incorporated in Canada in 2005 and in the US in 2014. We have used Cloud Computing from the beginning, so there is no need to install programs on our clients' computers. Presently, we work with any device that has a browser.



Telit embedded



UMTS | HSPA+
HE910

The HE910 cellular module helps us deliver critical fleet data to the cloud. The JF2 gives us accurate location data



DATALINK G5: A HYBRID DATA TRANSMISSION SOLUTION

FACTS

Nastek Tecnologia

www.nastek.com.br

● System

Datalink G5, a hybrid solution for data transmission

● Which Telit module do you use and why?

GL865-QUAD and SL871. Bundling these cellular and positioning modules reduces development complexity and cost

● Benefits

The Datalink G5 is a hi-tech, complete device for data transmission that combines Telit GL865-QUAD and SL871 modules for a multi-technology solution comprising: GSM, Wi-Fi, GPS (GPS, GLONASS, and QZSS – Beidou and Galileo enabled), RF, VHF, and Satellite.

Datalink G5



Datalink G5 takes advantage of the seamless integration between Telit's cellular and positioning modules

Lauro Cruz, Nastek Director of Technology

Datalink G5 can be used anywhere, and it is particularly well suited for remote areas like the Amazonian jungle, rural areas, deserts, mountains and polar regions. This is realized because of the ability to send information simultaneously through GSM, VHF analog and/or digital radios, and satellite. This combination guarantees that the data will be delivered.

The device can even be connected to a solar cell to charge its internal 5000 mAh Li-ion battery. Datalink G5 is ultra-low power, consuming fewer than 230uA in sleep mode. It can be used as stand-alone equipment to collect data from the field and send this information according to pre-defined rules.


This solution also has: a built in three-axis accelerometer, which allows users to analyze movements or driving performance; a built-in SD card for telemetry and route storage; a dual SIM card to increase coverage, and an internal alarm. All this functionality makes it the ultimate complete solution for any telematics and telemetry application. In addition this revolutionary device has eight analog/digital inputs that can be used to read vehicle ignition and/or sensors, plus four digital outputs that can be used in telematics applications, and also to

turn alarms on and off. Datalink G5 can also be set up to create a Wi-Fi network, enabling PDAs, Tablets and Smartphones in the field to connect to it and exchange text messages and service orders, anywhere on the planet.

This hybrid solution can be easily set up to meet each customer's specific demands. Because of the multiprocessor capabilities, it is possible to transmit data using one type of communication technology while at the same time it searches for others. It automatically chooses the least expensive connection available at the moment.

Datalink G5 is available and ready to be deployed anywhere. Telit's m2m global leadership position allowed us to develop a data transmission solution that provides a highly reliable device that can be used literally anywhere on the globe.




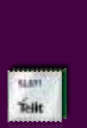
 The Nastek was created by engineers whose true calling was to help people. The idea was to produce a technology that would facilitate more purposeful lives, connect them and provide welfare. Today Nastek products are part of the lives of more than 130 million people every day.



Telit embedded

Telit embedded

Telit embedded

	
GSM GPRS GL865-QUAD	GPS SL871

GL865-QUAD and SL871. Bundling these cellular and positioning modules reduces development complexity and cost



INTEGRATED PARKING METER SOLUTIONS

FACTS **Integrated Technology Solutions Limited**
www.ITSLonline.com

● System

Metropolis Series parking meters for paid on-street parking

● Which Telit module do you use and why?

GE910/HE910 Telit Modems/SIMs are used in our parking meters. They are compact and offer reliable communications.

● m2mQIR Mobile

The interactive diagnostic tools and the modem are used for troubleshooting, e.g. sending SMS messages to the modem.

● Benefits

High quality modems/SIMs are vital for fast and consistent data communications, particularly for integrated sites where data is relayed between devices. Immediate reporting on revenue, meter faults and service alerts enable efficient service levels.

METROPOLIS Series Parking Meters



The parking meter market demands reliable online communications for fast and efficient customer payment transactions and data capture. Mark Oliver, Technical Director

OUR PARKING METERS ARE EASY TO USE

UX Alliance chose our Pay & Display meter as the easiest to use. Features include a large graphical display, fewer buttons to fumble over, and reliable GPRS bidirectional communications.

We introduced our latest generation parking meters, the Metropolis Series in 2011. Over 10,000 are currently operating in Australia, New Zealand, UK, Canada and the USA. They manage over 35 million transactions per annum and control 72,000 spaces.

There are three models: Pay & Display, where the customer displays a printed ticket on the vehicle's dashboard; and Pay by Plate or Pay by Space, both are ticketless systems where the customer enters on the meter's keypad their vehicle's license plate number or the marked bay number where they parked.

The Metropolis Series employs fast credit card payment processing. Its powerful central management system, EziCom, is a cloud-based system that pulls all the parking information together. It provides revenue, maintenance and statistical reports and sends fault warnings. In addition API functionality enables integrated solutions.

INTEGRATED SOLUTIONS

An integrated parking solution relies on fast data communications between meters and enforcement devices such as ground sensors, vehicle plate recognition cameras, enforcement handhelds and parking guidance systems.

Gold Coast in Australia has an integrated solution with data being sent to EziCom from 450 Metropolis Pay by Space meters. Features include ground sensors for the management of compliance and occupancy data, infringement tickets from enforcement handhelds, and ultimately a mobile camera system for license plate recognition.

EziCom's permit scheme (ePermit) and a mobile phone payment app (ePay) will also be available. Guidance systems viewed on a phone app or electronic street signage can be added.



HE910
Telit
UMTS | HSPA+
HE910

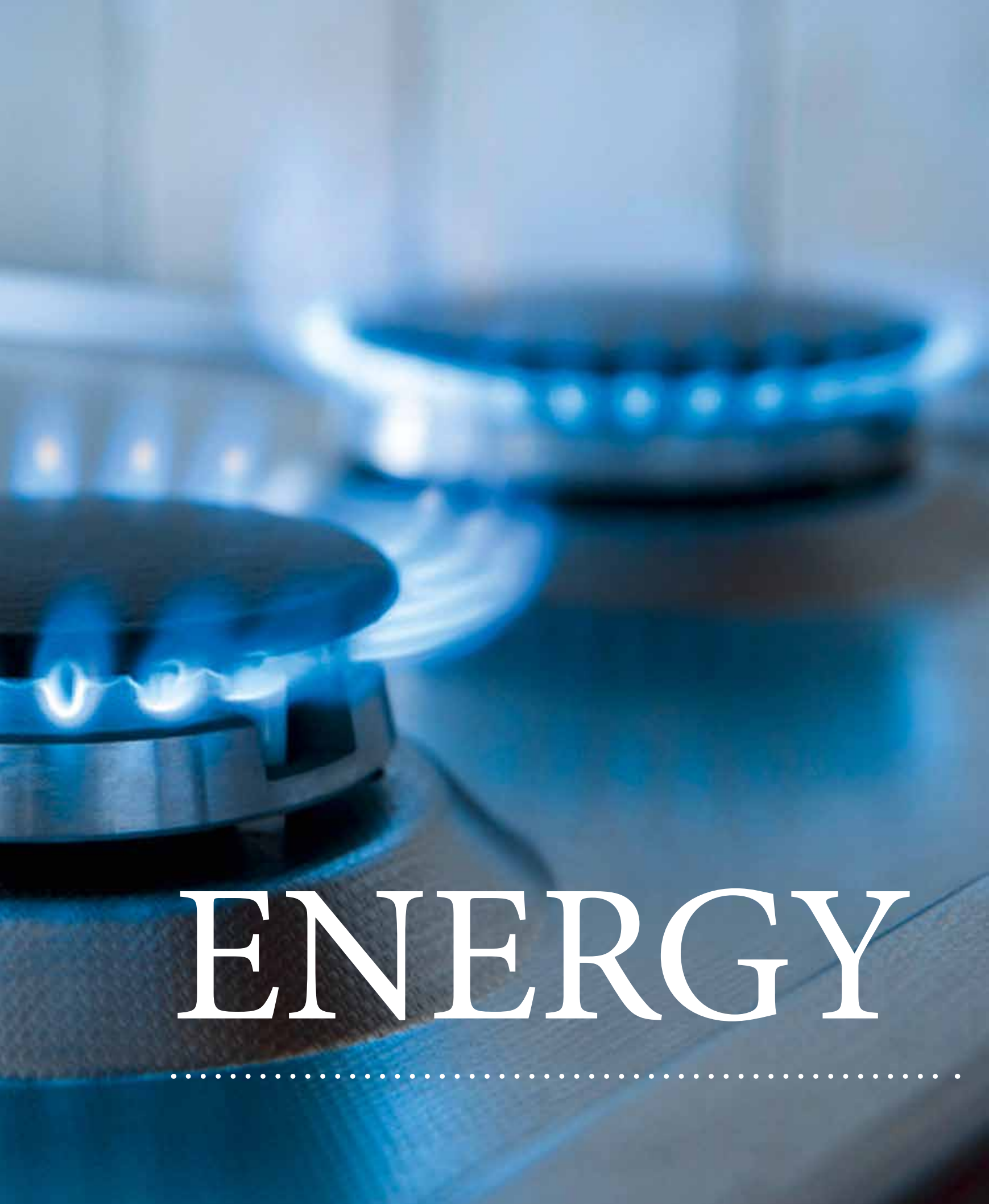
OE910
Telit
GSM | GPRS
OE910

Telit Modems/SIMs are used in our parking meters. They are compact and offer reliable communications.

Telit embedded



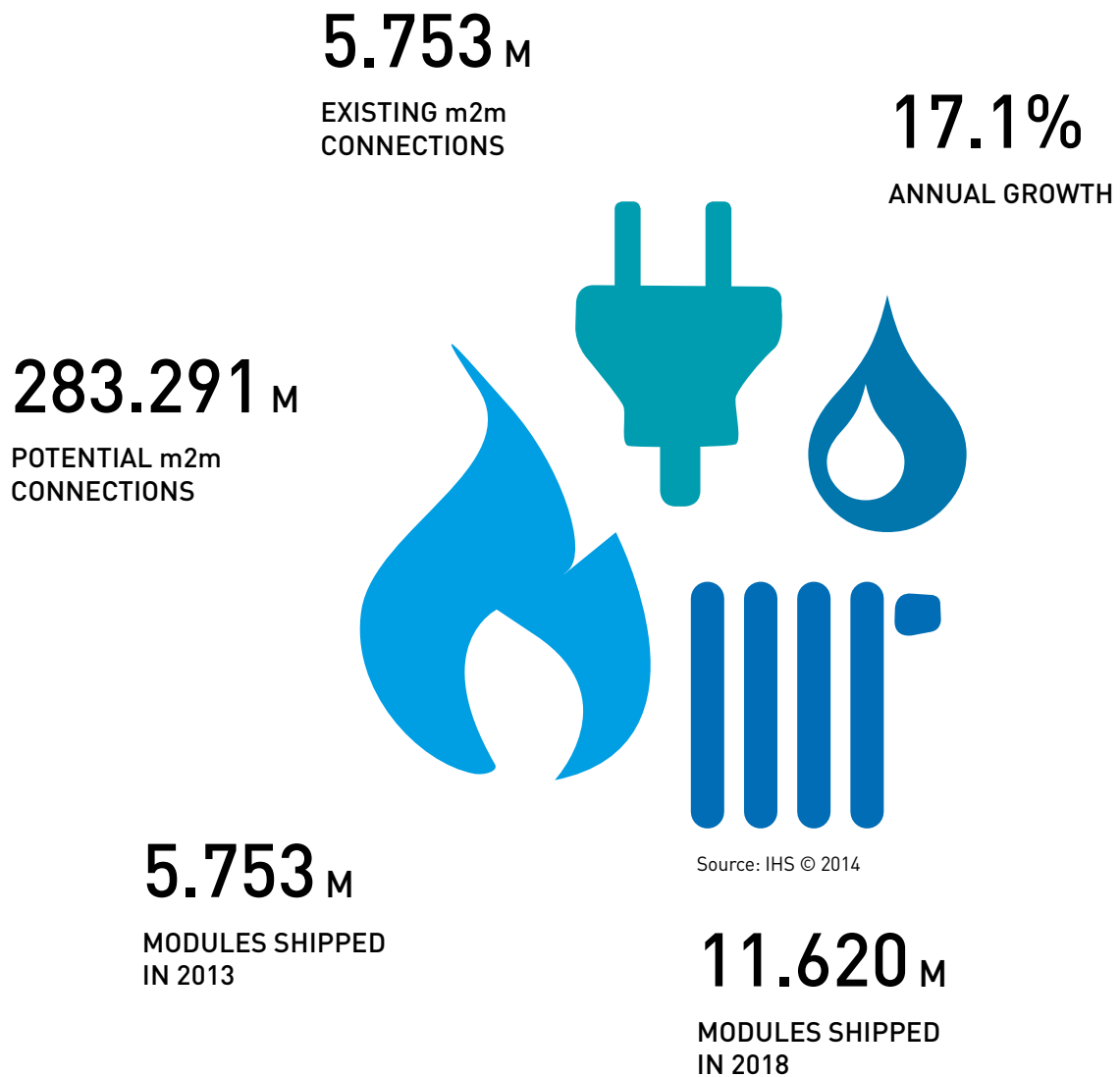
ITS provides technology solutions to a number of markets including Banking, Retail, Parking, Fuel, Self Service and Cash Handling.



ENERGY



“ In Europe (EU28+2), the penetration for smart meters, providing more comprehensive functionality than basic meter data collections, was 24 percent at the end of 2014.[...] By 2020 the penetration rate will increase to 58 percent. The installed base of smart electricity meters is forecasted to grow at a compound annual growth rate of 15.8 percent between 2014 and 2020 to reach 163.8 million units at the end of the period” [Source: ©2014 Berg Insight].





IOT – EFFICIENT MANAGEMENT OF OIL & GAS

FACTS

ISA – Intelligent Sensing Anywhere
www.isasensing.com/pt/

● System

C-Log – remote monitoring equipment for fuel and gas tanks

● Which Telit module do you use and why?

We use the CE910-DUAL and GE910-Quad V3 in our C-Log since they provide the most reliable connection for our customers.

● Benefits

C-Log is remote monitoring equipment that provides data logging and alarm transmission. It can be used in several monitoring solutions, such as the level reading in gas and other fuel tanks.

C-Log



We've been working with Telit because they provided us with the best technical solution and a prompt technical support.

Nuno Martins, Product Manager

ISA (Intelligent Sensing Anywhere) specializes in LPG Bulk Tank Monitoring. The technology has been applied in several market segments, from LPG, to Oil and Fuel, as well as Gas Cylinders. The principal monitoring objective is to provide accurate information about the level of all containers. This allows the distributor/utility to use this information in its value chain to optimize the replacement and refilling of the tanks.

C-Log allowed us to deliver added value data to our customers, enabling them to reduce up to 30% of the cost of refilling their tanks.

Until 2013, ISA was one of the leaders in the application of m2m technology to the gas telemetry market, having deployed 50.000 systems worldwide, using mainly a GSM/GPRS communication infrastructure. However, in the last couple of years that changed. In order to be able to meet our customers' demands, ISA positioned itself as a company that was closer to the end customer, enabling the utility/distributor to have direct engagement with its customers.

ISA has enabled the current customer portfolio to not only deploy sensors at the tank, but also to collect information on how the customer really uses its energy sources. In order to do so, ISA has entered the IoT era, starting with extending the range of measured physical variables. In end-user homes they include: gas tank levels, electricity consumption, sub-metering, temperatures, and humidity. This allows us to provide more information so that the utility/distributor can recreate the end-user context, thereby being able to provide more accurate services and above all, personalized services in addition to the existing offer.

Being able to generate a much larger stream of data also brings a set of new technological challenges to the table. Therefore ISA is pushing forward the integration of Telit technologies in its core products in order to enable a significant leap into tomorrow's IoT era.



ISA – Intelligent Sensing Anywhere is a technology-based company with an experience of over 20 years in Machine to Machine (m2m) «ready-to-go», solutions, from software and hardware, development to the provision of services.



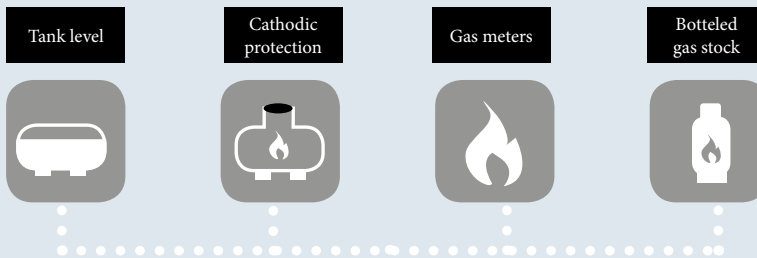
Telit embedded



CDMA | 1xRTT
CE910-DUAL

GSM | GPRS
CE910-DUAL

We use the CE910-DUAL and GE910-Quad V3 in our C-Log since they provide the most reliable connection for our customers.





TELEMETRY SOLUTION PREVENTS FRAUD LOSSES IN BRAZIL

FACTS

CAS Tecnologia
www.castecnologia.com.br

- **System**
RS2000 communication modules for smart metering
- **Which Telit module do you use and why?**
GC864-QUAD V2. It is ultra-compact and combines state-of-the-art technology with high quality and reliability.
- **Benefits**
The RS2000 communication modules provide: innovative technology for implementing telemetry for all business segments; advanced signal processing; mobile communications; and remote supervision.

RS2000 Lite



GC864-QUAD V2 was the perfect choice for our RS2000 communication modules, because of its ultra-compact design, high quality and reliability. Domingos Iorio, CAS Tecnologia Production Director

CAS Tecnologia, a Brazilian company specialized in the development of solutions for engineering systems, automation and telemetry – with special focus on smart metering devices for electricity, water and natural gas utilities – chose Telit's GC864-QUAD V2 for its RS2000 line of communication modules. This product line is the result of over 10 years of studies and developments made by CAS. It employs different product types and when combined they constitute a complete offer of sophisticated technology solutions that provide management, monitoring, automatic control system and remote supervision for any type of equipment.

This flexible and easily installable solution enables non-stop reading, processing and classification of different types of information acquired from the monitored equipment. Moreover, the RS2000 line employs different communication technologies, defined according to the needs of the application environment. The RS2000 communication modules feature innovative technology for implementation telemetry in all business segments where they provide advanced signal processing and mobile communication. The CAS solution identifies and supplies accurate data on fraud and losses, which, in turn, helps customers reduce costs.

The Telit GC864-QUAD V2 module was the perfect choice for RS2000 line communication modules because of its ultra-compact design, high quality and reliability. Telit also offers global support and relies on a local team that is always available to help us. They provide 24/7 support, which is a huge benefit.

CAS Tecnologia serves around 200 customers in Brazil, Latin America and Europe. Currently, it provides solutions for 20 of the 26 largest electricity utilities in Brazil – a list that includes Cematec, Cemig, EDP, Elektro, Eletrobras, Energisa, Light and Neoenergia. The company also provides products and services for enterprises such as Basf, Andrade Gutierrez, BM&F Bovespa, Claro, Tim, GVT, Bradesco, Itaú-BBA, HSBC, Garoto and many others.



GC864-QUAD V2
Telit
GSM | GPRS
CE910-DUAL

GC864-QUAD V2. It is ultra-compact and combines state-of-the-art technology with high quality and reliability.

 Founded in 2001, CAS Tecnologia develops engineering systems, automation and telemetry solutions that address our customers' critical problems. In this way we enhance the efficiency of corporate processes, governance and sustainability.



ROUTERS FACILITATE DELIVERY OF CLEAN ENERGY

FACTS

Multi-Tech Systems, Inc.
www.multitech.com

- **System**
MultiConnect rCell 100 series of industrial routers
- **Which Telit module do you use and why?**
Telit's xE910 family – CE910, DE910, GE910, HE910 and now LE910
- **m2mQIF Mobile**
Global connectivity and consistent, value-added services.
- **Benefits**
 - Cloud-based device management to simplify and scale deployments anywhere in the world
 - Lowest total cost of ownership
 - Wide selection of cellular technologies and models to optimize deployment needs
 - Long and stable lifecycles
 - Global certifications

MultiConnect rCell



MultiTech's cellular routers offer the long, stable lifecycle that we need for our solar energy panels. Farshad A. Samimi, PhD, Sr. Product Manager, Enphase

Enphase Energy harnesses the power of the sun through intelligent solar panel systems installed on individual homes. Micro inverters, incorporated within each panel, convert DC solar energy into usable AC current and communicate energy levels to a central performance monitoring system.

Traditionally solar panel systems (regardless of the number of panels) share one inverter. In this scenario, if one panel fails, the entire system shuts down. Instead, at Enphase, each panel has its own micro inverter – and each micro converter communicates with Enphase servers, resulting in more than 500 million messages a day.

Our panels generate immense amounts of operation-critical data. The Enphase server manages them, so they can track energy conversions, diagnose problems remotely, and ultimately ensure that the system is running seamlessly. MultiConnect rCell 100 Series cellular routers provide cellular communications and connectivity. The routers collect data from each of the panels and then communicate via the AT&T cellular network to Enphase's servers. Globally certified, carrier approved and designed specifically for rugged m2m communications, MultiTech's routers provide a long, stable lifecycle. They are easy to deploy, scale and are re-

motely managed using DeviceHQ, a hosted device management platform.

In the past, data transfer relied on a Wi-Fi or wired broadband in the home, which meant that homeowners had to engage with their panel manager every time they changed their Wi-Fi password or switched to another ISP. Realizing the limitations to this approach, Enphase employs cellular connectivity to ensure consistent, uninterrupted data communication. It's proven to be less intrusive to the homeowner while providing a more reliable connection.

Powered by AT&T's m2m technology, the Enphase Envoy-S Gateway provides reliable module level monitoring and remote management. The state-of-art user interface, Enlighten, is available on smart phones, tablets and desktops.



Enphase is a partner of MultiTech and AT&T and views cellular as part of its future. The low cost of using reliable cellular applications and advances in m2m technologies will help ensure a future comprising two billion rooftops that deliver clean energy to the plant.



Telit embedded



CDMA | 1xRTT
CE910-DUAL
Global connectivity and consistent, value-added services.

CONSUMER

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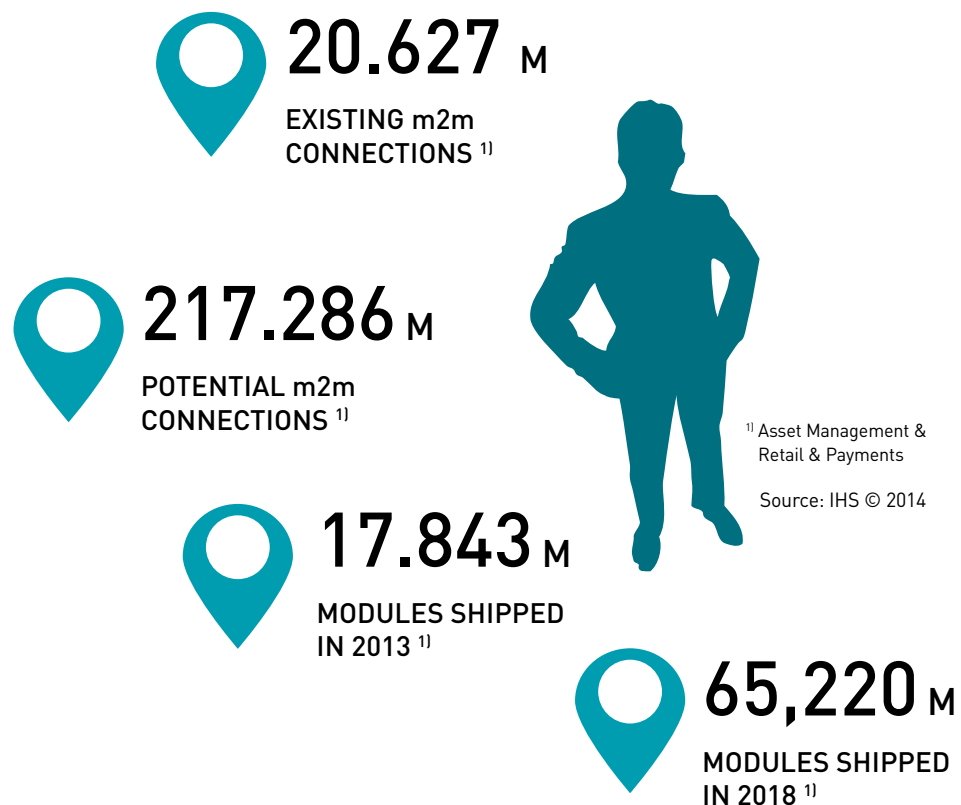
Internet
- websites
- hosting
- banners
- searching engines
- blogs
- chats
- applications

world data

Finance Business Culture
Weather Sport Home Video
Radio Technology Film
Electronics Shopping Design
Hull Internet Music Space
Travel Food
Entertainment Security
Classical Music Computers
Sunglasses Jewelry
The Data Shows People

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PROFESSIONAL



“ The market for connected wearables has entered a strong growth phase that will last for many years to come. Shipments of connected wearables reached 19.0 million units in 2014. The market is expected to grow at a CAGR of 54.7 percent to reach shipments of 168.2 million by 2019” (Source: ©2014 Berg Insight). Other applications areas like Vending & Payment and Asset Management are considered elements of the Consumer Professional segment here.



CONNECTING PRODUCTS FROM LEADING MANUFACTURERS

FACTS

Sikom Connect AS

www.sikomconnect.com

- **System**
GSM Eco Comfort and wireless sensors, connected to our cloud
- **Which Telit module do you use and why?**
Telit GE865. Cost effective and a small form factor: essential for consumer products.
- **m2mQIF Mobile**
Same solution and price all over Europe. Auto activation and de-activation. API to your subscription management system.
- **Benefits**
Hardware and software solutions for connecting products from leading manufacturers or vendors to the cloud, enabling cost-efficient delivery and operation of smartphone-based remote control and monitoring to their end-customers.



Telit's offer of one SIM-card and a pan-European price is perfect for our business model. Rune Bjerke, CEO

CONNECTING PRODUCTS

Consumers expect more and more functions in physical products to be available wherever they are. For a manufacturer or vendor of these products it takes a lot of new skillsets and focus to establish and operate such software solutions over time. Our solutions make this easy. Based on our unique cloud-based software and our own hardware, we customize fully integrated solutions for remote control and monitoring of the manufacturers' product from an iPhone or Android phone.

CHOSEN BY LEADING BRANDS

We have already connected Thermia heating pumps for Danfoss and paraffin heaters for Wallas. Using our solutions they deliver remote control and monitoring as a value added service to their users. All applications run in our cloud, and we also provide end-user credit card billing where relevant. Our system architecture and API enable easy integration under the manufacturer's

own brand. Outsourcing remote control minimizes costs and hassle and it allows our customers to focus on their core business.

FULLY INTEGRATED SOLUTION

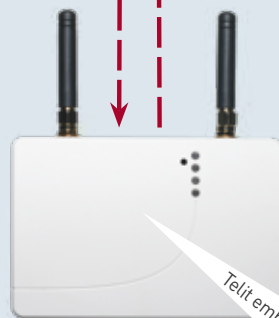
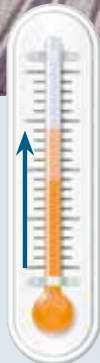
Our solution is based on our GSM gateways and Telit's modules, which are continuously online with our cloud using m2mAIR. This ensures that the information on the smartphone app is always up-to-date. The manufacturer's product can be wired or wirelessly connected to our gateways using different integration techniques. Our unique cloud solution enables control of devices from several manufacturers in one smartphone application. This means that each product can also be part of a complete package, e.g. for a smart home. Our GSM-gateways support a wide range of wireless control units and sensors. A comprehensive API enables fast and easy development of new services.

BUILT ON YEARS OF EXPERIENCE

We have worked with GSM-based hardware since 1997, and our cloud software platform is based on years of experience within M2M. More than 50.000 second homes are remotely controlled using our solutions, and our smart home installations are now increasing faster than ever.



 Sikom Connect delivers solutions for connecting a wide range of devices to the cloud, including smart home and niche business solutions. We have worked with hardware solutions within this area since 1997, and our cloud software platform is based on years of experience.



Cost effective and a small form factor: essential for consumer products.



Robustel

GO CELLULAR WITH A VPN ROUTER

FACTS

Robustel Technologies

www.robustel.com

● System

R3000 Industrial 3G VPN Router

● Which Telit module do you use and why?

Thanks to the HE910-D, our products can be deployed globally, no matter US or European or China

● Benefits

- Dual SIM redundancy for continuous cellular connections
- 2xEthernet ports, 2xSerial ports, 4xI/O, 1xUSB and MicroSD
- Cellular/Ethernet/WLAN WAN failover
- VPN: IPSec/Open VPN/GRE/L2TP/PPTP
- GPS, Wi-Fi optional
- Supports industrial protocols

R3000 Industrial 3G VPN Router

Thanks to the global certified HE910-D module, our R3000 Industrial 3G VPN Router quickly passed different approvals such as CE, FCC and AT&T. *Chen Xiaojun, CTO*

Robustel is an innovative company that focuses on providing robust access gateways for the IoT/m2m industry. Our products include: an Industrial Cellular Router, Gateway, Modem and m2m Cloud. We have ISO 9001:2008 certification and these products are widely used in mission critical scenarios. Our reference portfolio includes 20 operator partners and Fortune 500 worldwide customers.

m2m applications embrace a broad range of industries that serve our business and personal lives and each industry has its own protocols and interfaces. Our R3000 can be a great bridge for companies that want to provide mobile access to remote sensors, field devices, and IoT "things". It's a rugged, cellular router offering state-of-the-art mobile connectivity for m2m applications based on Telit's HE910, which provides high speed 3G HSPA+ connectivity up to 21Mbps. Thanks to the global certified HE910-D module, our R3000 Industrial 3G VPN Router quickly passed different approvals such as CE, FCC, IC, PTCRB, GCF, AT&T, Rogers, RCM, Anatel, CB, and E13.

The R3000 has been delivered in more than 80 countries and has a proven track record in these industries:

- Manufacturing
- Public sector
- Energy/Utilities
- Security
- Financial
- Retail
- Transportation
- Healthcare

We understood that m2m/IoT is a fragmented market; therefore we have a comprehensive customization capability in order to satisfy the different requirements of different industries.



TRAM STOPS



Robustel is an innovative company that focuses on providing robust, access gateways for the IoT/m2m industry, we aim to be leading provider for wireless device networking worldwide.



Telit embedded



UMTS | HSPA+ HE910

Thanks to the HE910-D, our products can be deployed globally, no matter US or European or China





ORBIC AX54N WIRELESS REMOTE SYSTEM

FACTS

Reliance Communications, LLC
www.reliance.us

● System

Orbic Remote Alert System: a self monitoring solution

● Which Telit module do you use and why?

Telit CE910-DUAL. This pre-certified module allowed us to maintain our development and launch schedules.

● Benefits

Has a built in wireless module capable of sending a call/text to eight pre-assigned numbers. Control system via app (iOS and Android). Configurable for up to 64 sensors. Perfect for use in vacation homes, garages, etc. and to monitor activity at home.



Orbic™ Remote Alert System AX54N

Telit supported our volume requirements, meeting the demand of a national retail launch. *Cornelius VanGinhoven*

The Orbic AX54N Remote Alert System offers users a convenient, low-cost solution for monitoring activity in the home, office, garage, vacation cabin or other location. The easy-to-install solution allows parents to monitor their children's arrival from school, pet owners to know when the dog walker arrives, and small business owners to note when the cleaning crew leaves.

The Orbic AX54N has a built in wireless module capable of sending an alert, via SMS or phone call, to multiple devices when a sensor is triggered. Users can arm/disarm the system via keypad input, remote SMS, or a key fob. A free app is available for both Android and iOS. The AX54N has a panic button for emergencies and is tamper proof. A 9-volt battery is included for emergency backup.

The starter pack includes the main unit and one motion sensor plus AC adaptor, two 9-volt batteries, mounting brackets, screws and a user's guide. Additional motion sensors, window/door sensors, smoke alarm

and key fob are available separately. It is configurable for use with up to 64 sensors/accessories.

The Orbic AX54N appeals to a wide consumer audience. To illustrate its broad appeal, two use cases are outlined.

○ A family owns a cabin in a remote location. A caretaker checks on the property periodically. With the Orbic AX54, the property is monitored between caretaker visits. It's inexpensive, simple to install and if a sensor is triggered, the owner, caretaker and several neighbors are notified immediately.

○ A young couple resides in the city and has limited storage space. They lease a storage unit and find the Orbic AX54N is a great solution to monitor their belongings remotely. If a sensor is triggered, they receive an alert and can follow up.

The Orbic AX54N Remote Alert System is currently available at select Walmart stores and at Walmart.com.



Telit embedded



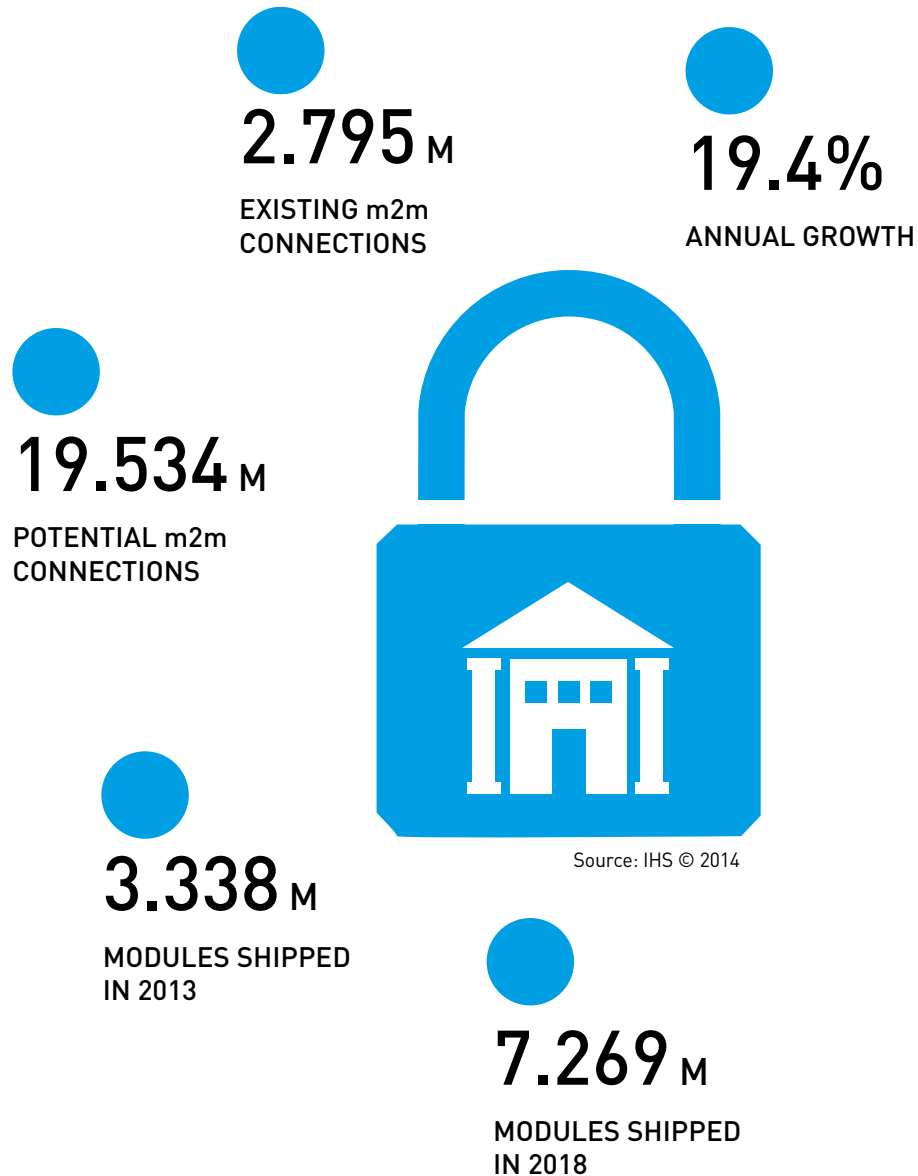
Reliance Communications is a national distributor of wireless devices and accessories. We also work with global manufacturers to develop new devices. We offer a variety of scalable and customizable services including engineering, marketing, logistics and inventory management.





SECURITY

“ Most of the growth in the modules market in the Security sector is attributed to the residential alarm market; the decreasing number of households with landlines will lead to greater uptake of cellular-connected systems. At the same time, more mobile network operators are now attempting to play a larger role in the home security industry, a trend which will further drive module shipment into the sector in coming years” (Source: ©2014 ABI Research).





ESSENCE SMART LIVING

FACTS

Essence

www.essence-grp.com

● System

WeR@Home™ Smart-Living connected home solution

● Which Telit module do you use and why?

The HE910 family gave us a lot of deployment flexibility due to its wide range of technologies and frequencies.

● Benefits

WeR@Home™ is a smart living system that gives the consumer an easy-to-install and simple-to-use smart home solution that is also affordable and scalable.

WeR@Home™
Product Suite

Telit's support during the migration to the new 910 family was a major factor in the success of our solution. Ohad Amir, CTO

Essence's IoT connected living solutions require the use of robust and flexible cellular communications, both as primary and backup channels in its three lines of business. All our m2m home product suites rely on cellular communications to transmit varying amounts of critical data to service providers and end-users.

WeR@Home™ is a holistic eco-system for service providers to offer new services and increase their revenue by providing a complete, smart home package to their customers. It allows users to easily and quickly turn their residence into a connected home by installing the core security system within minutes and by adding home automation capabilities such as Z-Wave® door locks, smart thermostats and switches. The simple and intuitive mobile app gives users the ability to seamlessly manage their homes and monitor events from anywhere in the world.

The solution relies on communication between the system's gateway, the WeR@Home™ hub, and the servers on the cloud. This is realized using the two channels on the hub: one is an Ethernet port to the home's network; the other is a cellular channel that employs a SIM card. In many cases,

customers prefer to use the cellular channel as the primary form of communications.

The functions described above require real time interaction between the hub and the end-user's interface. For this reason, it is imperative that all forms of data communications are stable and fast. WeR@Home™ also requires data channels to be always open to allow constant connectivity with the system's servers, thereby allowing instantaneous response to user commands.

When considering a partner for cellular communications modules, a major issue to take into account is the availability of a variety of cellular technologies and frequencies supported in the same family of modules. To be able to integrate any technology from 2.5G to LTE on any frequency through one module family drastically reduces development time and operational costs.





HE910
Telit
 UMTS | HSPA+
 HE910-Family

The HE910 family gave us a lot of deployment flexibility due to its wide range of technologies and frequencies.

Essence is an award winning global provider of IoT connected-living solutions for communication, security and health-care service providers. They have built an impressive installed base over the past 20 years, with tier 1 service providers all over the world, deploying over 10 million products.



LOCK8: GLOBAL BIKE-SHARING

FACTS

LOCK8

<http://lock8.me>

● System

LOCK8: global bike sharing enabled by smart bike security.

● Which Telit module do you use and why?

LOCK8 uses the GE910-GNSS; it's a combo module, offering both GSM and GPS functionality.

● Benefits

LOCK8 is a global bike sharing platform that allows bike-share operators and users flexibility and ease-of-use. It makes bicycle travel the most affordable and convenient mode of transportation within cities.

LOCK8



LOCK8 is disrupting bike sharing and enabling smart security

Franz Salzmann, CEO LOCK8

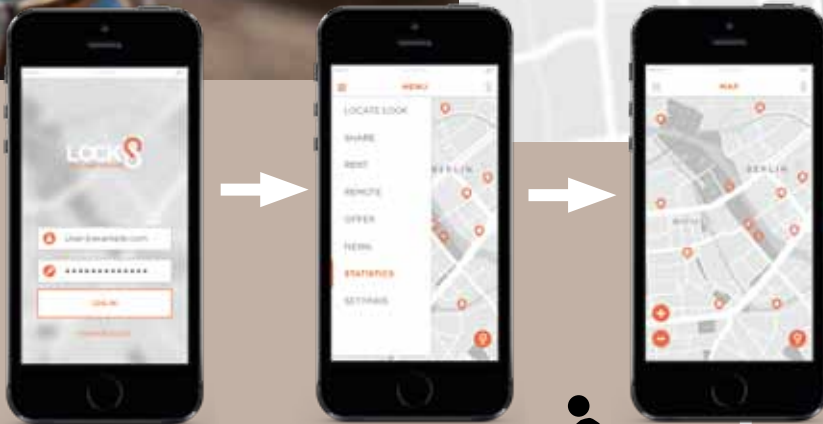
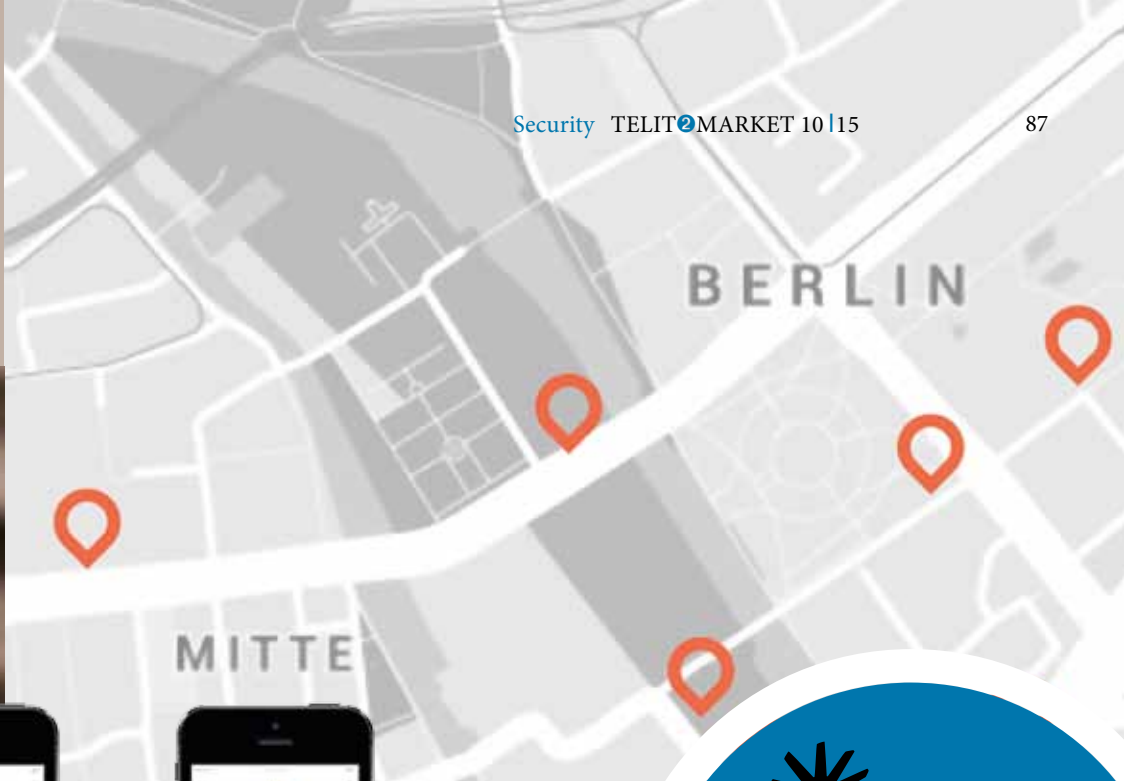
Until recently, the bicycle security market experienced very little technology innovation since the first bike lock was produced over 100 years ago. However, LOCK8 has realized the potential of connected bicycle security and the impact innovation could have on the way we travel within cities. The company is using Telit m2m technology to innovate both the bicycle security and bike-sharing markets. The GE910-GNSS chip in the LOCK8 hardware allows users and bike-share operators to communicate directly, enabling bikes to be tracked and usage data to be stored and analyzed.

LOCK8's platform employs a range of sensors, such as a three-axis gyro-accelerometer, a vibration trigger-switch, and a thermometer. The hardware interprets information from the sensors, such as movement and temperature. If the LOCK8 device identifies risk of theft, damage, or low battery, it uses m2m technology to notify the bike share operator via a Fleet Management Software package. The technology simplifies operation of a bike fleet, which encourages more businesses to adopt bike sharing.

LOCK8 is encouraging connected bicycle fleets to operate worldwide, so that bike share users can locate and rent bicycles in all major cities around the world, using just one smartphone application.

Telit m2m technology is crucial to the convenience of the LOCK8 bike-sharing experience. Unlike traditional bike share schemes, LOCK8 does not rely on expensive docking stations. The technology allows bike share operators to define their own virtual geofence-zones. The devices communicate with the operators' Fleet Management Software in order to identify where they can be parked. This is more convenient for bike share users, as they do not have to worry about returning their bikes to a free parking space.

Telit allows LOCK8 to deliver reasonably priced bike sharing, without compromising security.





LOCK8 (Velolock GmbH) is a high-tech hardware and software development company, innovating urban mobility solutions.



LOCK8 use the GE910-GNSS for the flexibility; it is a combined module, offering both GSM and GPS functionalities.





TRACKING DEVICE HELPS CATCH CRIMINALS

FACTS

3SI Security Systems
www.3sisecurity.com

● System

PharmaTracker®

● Which Telit module do you use and why?

HE910 Cellular modem and JF2 GPS module: Telit provides quality products perfectly suited to our application.

● Benefits

PharmaTracker® protects pharmaceuticals from theft by helping law enforcement track & capture the robbers, recover stolen drug products & deter future crime. National chains & independent pharmacies use PharmaTracker.



Pharmatracker
Bottle

Our devices have a nationwide 78% success record in arrests and recoveries. Mary Pifer, VP International Marketing & Product Management

There has been phenomenal growth in the theft of pharmaceutical products: statistics vary, but large-scale thefts are estimated to have increased between 30-60% since 2011, and the average loss is over \$150K per incident. Add to that the huge number of robberies at individual pharmacies, and it's easy to see that these crimes are a major problem. Pharmacies clearly need a reliable and safe solution.

PharmaTracker® uses the reliable ESP® (Electronic Satellite Pursuit) technology pioneered by 3SI Security Systems. Virtually imperceptible by criminals, the unit automatically detects the theft and silently notifies law enforcement. Using GPS technology, the officers locate and track the criminals... leading to recovery of the stolen items and apprehension of the criminals.

PharmaTracker has a proven track record with stories like this one: seven career criminals in the Detroit area targeted a pharmacy. They entered the store in a blitz attack, grabbed hundreds of Schedule 2 and 3 narcotic bottles and fled in a waiting car. There were no cops around so they thought they had succeeded. But, just 2 minutes after they entered the store, a PharmaTracker device hidden in one of their bags automatically alerted the communications center of the Detroit PD. The tracking started

just 3 minutes after the robbery. The Detroit PD communications center monitored the criminals' progress and dispatched officers to the moving vehicle.

The suspects even made a U-turn and doubled back to see if they had a tail, but saw no police officers. Police dispatchers kept the field officers updated on the car's location. The device finally stopped and police were on scene and surrounded the house within minutes. They gained legal entry into the residence and took the robbers into custody. In the end, there was no high-speed chase, no injuries to anyone, and no one was placed at risk. Hundreds of narcotics bottles were recovered and serial burglars were arrested. The entire incident lasted 14 min.



For over 40 years, 3SI Security Systems has been the world leader in asset protection systems designed to recover stolen cash and high-value assets, apprehend criminals and deter crime.

Telit embedded



GPS JF2 UMTS | HSPA+ HE910

HE910 Cellular modem and JF2 GPS module: Telit provides quality products perfectly suited to our application.



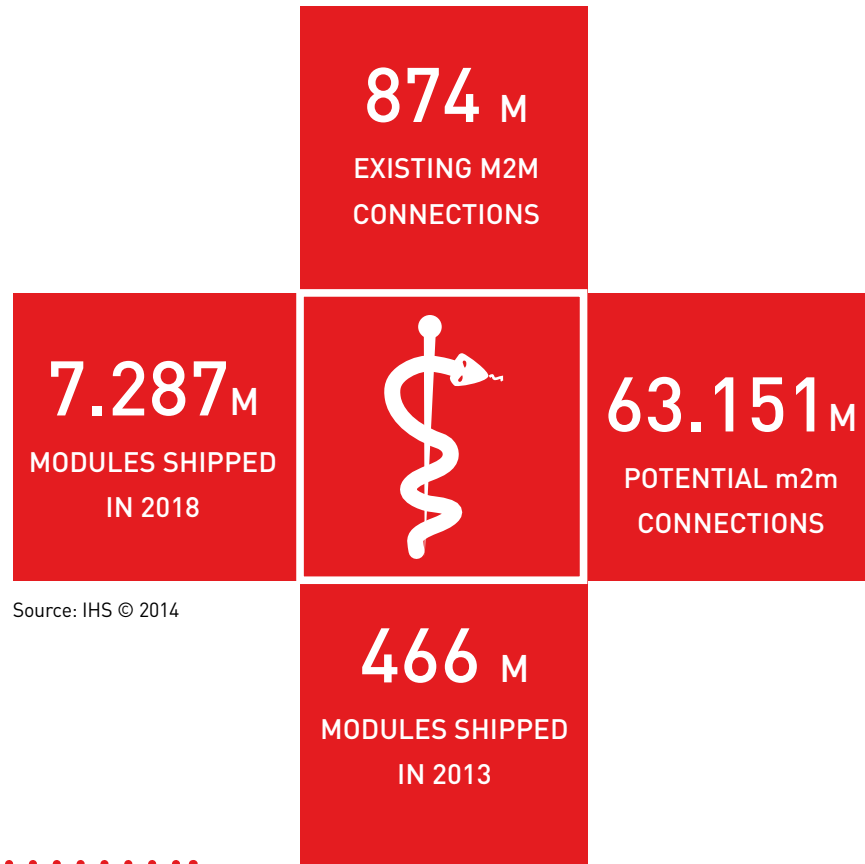


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HEART RATE

HEALTH



“ Module shipments to the healthcare market will grow considerably faster from 2012 to 2018 than any other vertical market [..]. Rising demand for services at a time when healthcare spending is under intense pressure, governments and healthcare providers worldwide are increasing reliance on remote patient monitoring to provide cost effective medical care. This will result in greater use of cellular M2M modules in the global healthcare industry, particular at the end of the forecast period” (Source: ©2014 ABI Research).

CARE & WELLBEING



buddi

YOU'RE NEVER ALONE WITH A BUDDI

FACTS

Buddi Ltd.

www.buddi.co.uk

System

buddi: 24/7 emergency support at the touch of a button

Which Telit module do you use and why?

We use the GE865-QUAD modem within buddi due to its low power consumption and small form factor.

m2mQIF Mobile

m2mAIR provides management tools, so Buddi can monitor devices, as well as receiving summary information on all devices.

Benefits

A go anywhere, anytime personal emergency response service, providing confidence for users and anyone who cares for them. By wearing the wristband 24 hrs a day, help is always there at the touch of a button, whether at home or when out and about.



Telit provides the SIM cards for all our devices. This allows communication with central servers, which is essential to locate users.

Charles Lewinton, Head of Engineering

Buddi Ltd uses the world's most advanced technology to locate people, operating in both healthcare and security sectors. Founded in 2005 by British entrepreneur Sara Murray, who came up with the idea for buddi when her young daughter temporarily disappeared at a supermarket. She wanted to create a way to give both her and her daughter peace of mind, spending two years researching GPS technology before developing the first buddi device.

Today, buddi leads the field in assistive technology helping vulnerable people including the elderly, dementia patients and people with special needs to remain independent for longer. The buddi product provides reassurance to both family members and carers, it is currently used by more than 200 local councils across the UK.

By wearing the wristband 24 hrs a day, providing it is within range of the clip containing the Telit modem and SIM chip, help is always there at the touch of a button. A reliable network connection means that essential data from the device reaches our servers, and in a significant upgrade for our latest device, Telit technology now allows a two-way voice channel to be opened over the GSM network.

This means that the person with the device can talk to the Buddi call center, and in case of an emergency can be reassured that help is on the way.

By pressing the alert buttons for help or if the system detects a fall, our 24hr monitoring service can find the location, talk to the wearer to establish the kind of assistance required, and notify pre-assigned emergency contacts. Functionality provided by the wristband monitors activity levels during the day and during sleep at night, which both provide indicators of good health and stable routine.

The Telit SIM chips are procured in a commercial agreement that is well suited to our business model, which offers the flexibility for Buddi to choose when we activate or deactivate our devices. This is particularly useful for cost-sensitive local authority customers, who often hold some stock while waiting for allocation.



Telit embedded



GE865-QUAD
Telit

GSM | GPRS
GE865-QUAD

We use the GE865-QUAD modem within buddi due to its low power consumption and small form factor.



HELP



Buddi was founded in 2005 and immediately began developing state of the art, proprietary technology for locating individuals with unparalleled speed and accuracy. Today, Buddi is an integrated products and services company, with established location and monitoring offerings in the Safety and Health and Security markets.





CHANGING THE WAY THAT HEALTHCARE IS DELIVERED

FACTS

ResMed

www.resmed.com



System

AirSense™ 10: a positive-airway pressure device platform



Which Telit module do you use and why?

CE910 for CDMA and GE910 for GSM/GPRS for continuous patient care



Benefits

ResMed Air Solutions – a fully integrated approach to patient care that leverages cutting-edge technology and wireless connectivity.

AirSense™



These modules enable continuous patient care. ResMed employs Telit's CE910 for CDMA and the GE910 for GSM/GPRS networks.

Greg Peake, Director, Global Product Marketing

ResMed, a global leader in sleep and respiratory medical devices, has launched its AirSense™ 10 positive-airway pressure device platform, which provides breakthrough benefits for the treatment of sleep apnea, a condition affecting approximately one in five U.S. adults.

The sleep industry is changing. Healthcare providers are being asked to see more patients in less time, better document improvements in patient outcomes, and coordinate the flow of data between patients, physicians and insurance companies. These challenges have led to greater demands for the efficient delivery of information.

CONNECTED CARE

The answer to today's challenging market is a fully integrated approach to patient care that leverages cutting-edge technology and wireless connectivity. Adding integrated connectivity to its leading therapy solutions, ResMed's comprehensive system gives patient care teams the tools to directly impact patient outcomes, and streamline the way that businesses manage sleep patients. Combined with ResMed's new cloud-based patient management system, AirView™, the AirSense range of connected devices provides a seamless connection between patients and patient care teams throughout the treatment journey.

BREAKTHROUGH TECHNOLOGY

Wireless connectivity and all the associated benefits are provided by the Telit xE910 family of modules, which enable continuous patient care. ResMed employs Telit's CE910 for CDMA and the GE910 for GSM/GPRS networks.

BENEFITS OF REMOTE PATIENT MONITORING

With the ability to access nightly patient therapy data, care providers can immediately intervene with patients that are having issues. And with the option of setting up email and text message notifications based on patient behavior, care providers can now be proactive with those who require assistance to help them get back on track. Care teams can also access patient and device data on demand, as well as troubleshoot and change settings remotely to help patients adhere to their therapy.



ResMed is a leading developer, manufacturer and distributor of medical equipment for treating, diagnosing, and managing sleep-disordered breathing and other respiratory disorders.



Clinician monitors the data.



Doctor adjusts therapy settings as required.



Sleep data is sent to the cloud.



Patient is sleeping comfortably throughout the night.



CDMA | 1 x RTT
CE910-DUAL

GSM | GPRS
GE910-DUAL

CE910 for CDMA and GE910 for GSM/GPRS for continuous patient care



M2M HELPS INCREASE ACCESS TO QUALITY HEALTH CARE

FACTS

Unetel SA

www.unex.com.ar



System

Remote home care services management solution



Which Telit module do you use and why?

GL865-QUAD and G30. They provide GPRS functionality, a reduced footprint and low integration costs.



Benefits

The solution features a full registry of medical professional activities and delivers appropriate reports to the home care service provider. Doctors, relatives and caregivers receive a constant update on the status of a patient's health.

Our remote health management platform uses Telit GL865-QUAD and G30 modules to provide robust data transmission over GSM/GPRS networks. Jorge Samperisi, Owner of Unetel

Unetel, an Argentinian company with more than 10 years of experience in manufacturing of high-tech communication systems, has developed a solution for home care services. The remote health management platform uses Telit m2m GL865-QUAD and G30 modules that provide robust data connectivity over GSM/GPRS networks as well as the ability to make voice calls. Functionality includes a full registry of medical professional activities and the delivery of reports to the home care service provider. In addition this innovative monitoring and tracking solution gives doctors, relatives and caregivers a constant update on a patient's health status and location.

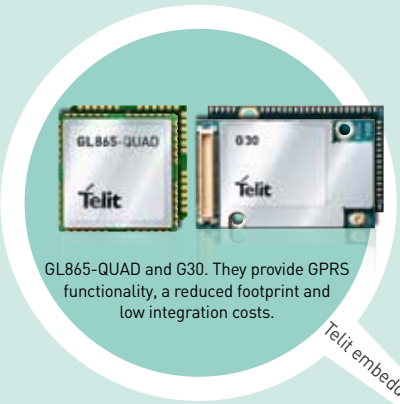
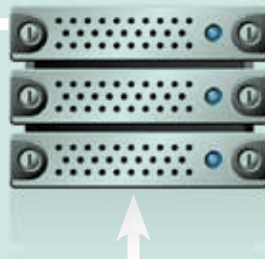
The solution's comprehensive offer includes communication over cellular networks for data transmission, real-time alerts and notifications, registry and identification of all care workers, activities developed and their duration, generation of up-to-date reports and emergency voice calls over a GPRS network. The device also employs an internal battery in order to ensure performance when there is a power outage.

Easily installed in the patient's home, Unetel's system enables a streamlined patient-company re-

lationship. It is an excellent example of how wireless technologies, combined with mobile m2m applications, can transform health care by boosting efficiency, raising quality and improving access to information. By providing a complete ambient-assisted living solution, the solution allows chronically ill patients to be monitored and receive secure professional medical care in their homes, thereby ensuring their health, safety and well-being. Moreover, it offers an alternative approach for health care service providers to leverage their expertise and knowledge, as well as reduce costs while greatly improving the quality of care.

Unetel Solution





GL865-QUAD and G30. They provide GPRS functionality, a reduced footprint and low integration costs.



 Unetel SA develops m2m solutions for a wide range of sectors such as vending machines, mobile location, home automation, remote control, telemetry and security. We are partners of Telefónica de Argentina, which uses our equipment and applications for both their own needs and their corporate clients.



touchcom

MOBILE HEALTHCARE SOLUTION FOR DIABETES

FACTS Touchcom Co.,Ltd
www.touchcom.tw

- **System**
3.5G Mobile Blood Glucose Meter with Cloud Service
- **Which Telit module do you use and why?**
The UE910 module provides instant transmission of glucose testing results to a care management server with instant feedback and coaching to the patient.
- **Benefits**
AppZone based wireless connectivity to HEALTHCARE cloud server. With this system, results are shared in the cloud. For every reading the patient receives feedback and guidance that may be automated or may trigger a demand for specific caregiver advice.

Touchcom has developed blood glucose monitoring technology that connects a mobile glucose meter to a HEALTHCARE cloud server.

Sino Cheng, GM

The number of adults worldwide with diabetes has more than doubled in three decades, jumping to an estimated 347 million. The increase is due to aging populations – diabetes typically hits in middle age – population growth and rising obesity rates.

Diabetes is a costly, chronic disease that has no cure. Defining the distribution of specific characteristics among diabetics can assist in planning, implementing and evaluating diabetic programs for primary, secondary and tertiary prevention and control. In planning services for diabetes control, equity policies have to be considered.

Today, there are many diabetes patients that need to be monitored and our Mobile Blood Glucose Meter provides instant transmission of testing results to a care management server with instant feedback and coaching to the patient. Home glucose monitoring is universally recognized as essential to the management of diabetes and the prevention of complications. And historical information of the

patient records, eating habits, exercise and medicine intake will enable better decisions to be made by doctors and clinical staff.

Touchcom's technology transforms the management of diabetes from inefficient and episodic contact between patient and caregiver into a continuous and empowering model. Investigations have shown the potential of this type of connectivity to improve patient adherence to recommended testing. The patients are in control and can give anyone who supports them, such as their healthcare providers and family members, read-only access to their glucose data. Patients determine the members of their support network that are allowed to view their results. The Touchcom portal allows users to view all their glucose data from a PC, Mac or Smartphone.

3.5G Blood Glucose Meter





UMTS | HSPA
UE910

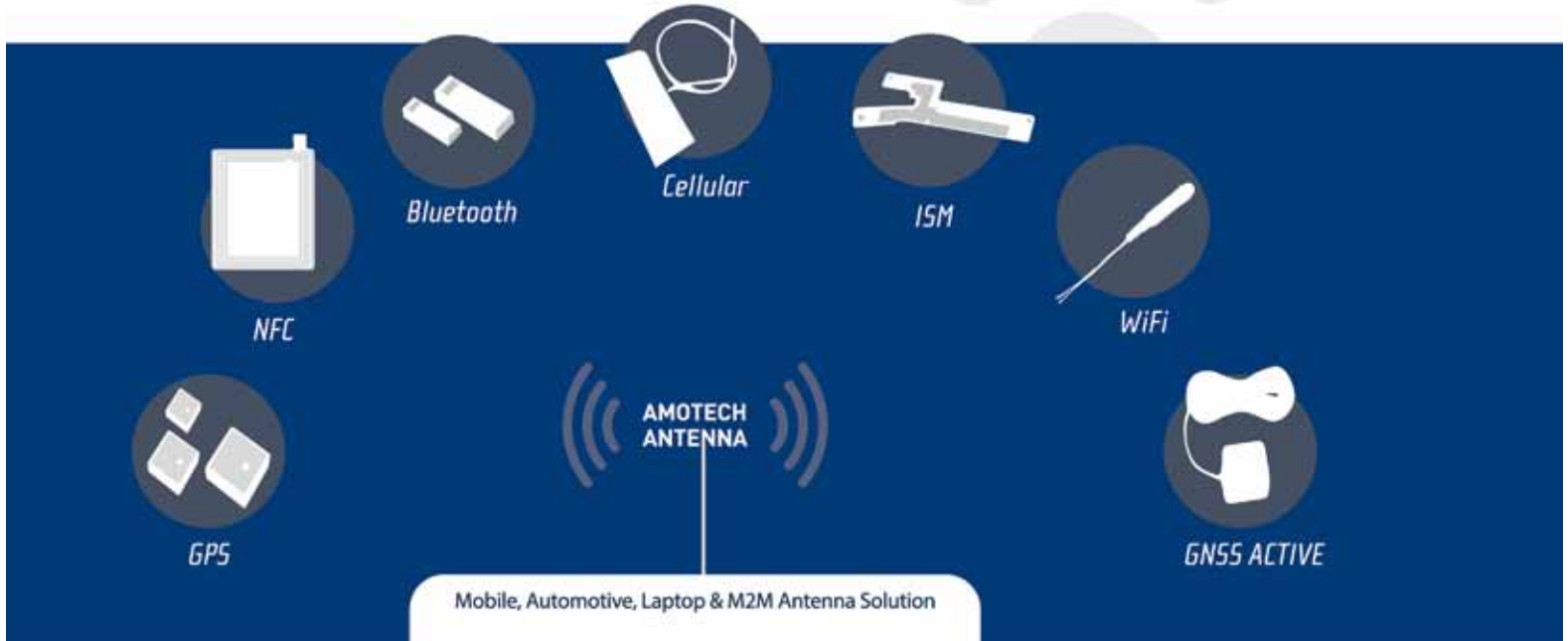
The UE910 module provides instant transmission of glucose testing results to a care management server with instant feedback and coaching to the patient.



 Touchcom developed the world's first cellular-enabled Blood Glucose Meter. The technology transforms the management of diabetes from inefficient and episodic contact between patient and caregiver into a continuous and empowering model.

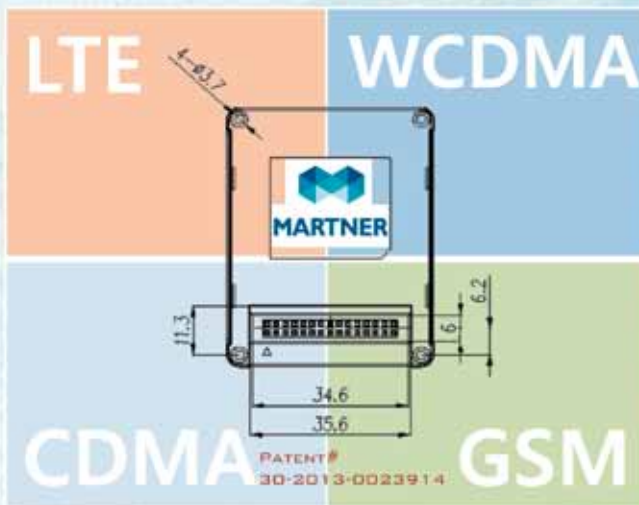
Based on Advanced Material Technology & Excellent RF design

Amotech's Antennas offer customers with best solutions for the numerous applications which cover from hand held devices to automotive areas. From very low frequencies for NFC antennas to 5.8GHz WLAN antennas, Amotech is dedicated to leading antenna technology.



Network to Korea/Global IoT Business

Unified FormFactor



- ❖ Cellular / RF / GNSS Module supplier
- ❖ Mobile Operator IOT consulting
- ❖ Application Design with Telit solution
- ❖ Certified Telit Business Partner
- ❖ Certified SKTelcom Business Partner
- ❖ Member of Korea IoT Association



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[HTTP://WWW.MARTNER.CO.KR](http://www.martner.co.kr)

+82-2-6677-0880

HELP@MARTNER.CO.KR

For All IoT machines

m2mAIR Cloud powered by deviceWISE





MITSUBISHI ELECTRIC'S IOT GATEWAY

FACTS

Mitsubishi Electric Factory Automation

us.mitsubishielectric.com/

● System

Mitsubishi Electric Factory Automation's IoT Gateway

● Which Telit module do you use and why?

None. Mitsubishi Electric Automation's IoT Gateway utilizes deviceWISE embedded technology and m2mAir Cloud services.

● m2mAIR Cloud

m2mAir Cloud offers reporting that improves information visibility and access.

● Benefits

The company's gateway provides unmatched scalability and flexibility in connecting to existing smart assets, and bridging the IT gap with a simple, clean, and fast IoT solution.

ILS Technology's deviceWISE technology and m2mAir cloud enable flexible connectivity on the company's IoT Gateway.

Gulam Khan, Sr. Automation Solutions Engineer at Mitsubishi Electric

Mitsubishi Electric's IoT Gateway utilizes deviceWISE embedded technology in order to make IoT flexible and scalable for a wide variety of assets at facilities, plant floors, and remote sites. Applications that the gateway can securely connect to the Cloud include assets in building automation, data centers, remote pump stations, EV charging stations, distributed solar/wind farms, and plant floors.

Desmond Wheatley, President and CEO of Envision Solar, a leading solar EV charging station company, believes the IoT offers great value because communicating with the components of the charging stations and the company's other products enables design improvements and preventative maintenance through IoT's data intelligence. In addition, sharing much of that data with municipal and corporate customers allows them to track the sustainability goals they are committed to achieving.


Operating the heating and air conditioning (HVAC) systems is often the largest operating expense at a commercial facility. IoT's extended connectivity brings with it the ability to obtain a detailed understanding of the energy consumption profile of a facility and provide opportunities to achieve higher energy efficiency. The ability to continually monitor and analyze energy consumption from

anywhere via the IoT is a significant benefit. Additionally, using data collected via a building automation system further provides facility managers' ability to implement behavioral changes that result in even more energy savings. The use of building automation is a robust first step to controlling energy consumption and cost, and it can be beneficial in achieving government energy regulations, explains Jeff Whitelaw, Senior Director, Engineering Management and Testing at Mitsubishi Electric Cooling & Heating.



IoT Gateway



 Mitsubishi Electric Factory Automation's IoT Gateway provides unmatched scalability and flexibility in connecting to existing smart assets, and bridging the IT gap with a simple, clean, and fast IoT solution.

Smart Assets Connected with:

- Mitsubishi Electric Platform
- Rockwell Automation Platform
- Schneider Electric Platform
- Siemens Platform
- Honeywell Platform
- Omron Platform
- Johnson Controls Platform
- Other Platforms





CLOUD-BASED TECHNOLOGY TRANSFORMS SERVICE

FACTS MC Machinery Systems, a subsidiary of Mitsubishi Corporation

www.mcmachinery.com

System

MC Remote 360 enables remote monitoring; minimized downtime

Which Telit module do you use and why?

None. MC Machinery Systems is using Telit's deviceWISE m2m application enablement platform.



Benefits

With the insights provided by MC Remote 360, customers can improve output and reduce the cost and risk associated with unexpected downtime.



MC Remote 360-enabled machines with deviceWISE provide increased productivity, improved efficiency and reduced downtime.

Tony Imbrogno, VP service and support at MC Machinery

In today's competitive manufacturing environment, machine-tool owners must assure that their production lines stay up and running. Manufacturing companies want 24/7 monitoring of all critical aspects of their operation and expect prompt service and support from their suppliers of essential – often expensive – manufacturing equipment. Therefore, leading machine-tool builders are moving beyond traditional service departments by investing in Cloud-based technologies that allow information from the machines on the customers' production floor to be open and shared with their service, maintenance and engineering experts.

A leader in this Cloud-enabled customer service transformation is MC Machinery, a part of Mitsubishi Corporation. We provide our customers with EDM, Laser, Waterjet, Milling, Additive Machining, Tuning, and Press Brake machines. The company recently introduced MC Remote 360 – powered by the deviceWISE m2m platform – which enables remote monitoring and provides real-time data to help increase productivity, improve efficiency and reduce down time for their equipment.

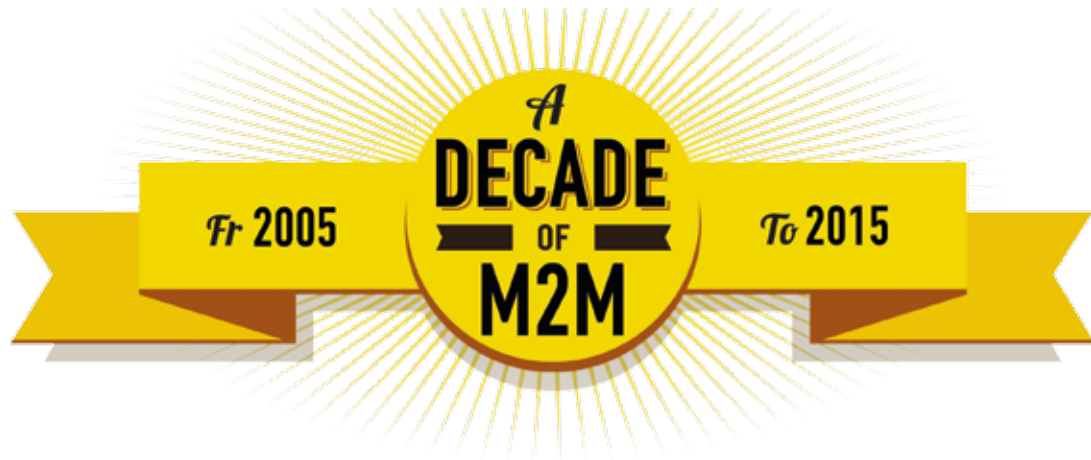
Customers can leverage m2m/IoT technology to monitor MC Remote 360-enabled machines around the clock from their PC, mobile device or tablet. MC Remote 360 provides visibility to the equipment's status, user alerts and notifications, history, maintenance and run time, and access to machine backup files via Cloud storage.

Should issues arise, remote diagnostics & fault monitoring lets MC Machinery securely access all functions, change parameters, upload/download programs and material files necessary for troubleshooting and diagnostics, improve response and support, and eliminate the cost of onsite visits. Alternatively, customers can be notified to fix the issue utilizing feedback from the machine or a service engineer who is scheduled to visit the site to remedy the problem.



MC Machinery Systems is the industry leader in high-precision wire and sinker EDM, 2D and 3D Laser, Milling, Additive Machining, Press Brake & Waterjet cutting machines.





A DECADE OF M2M

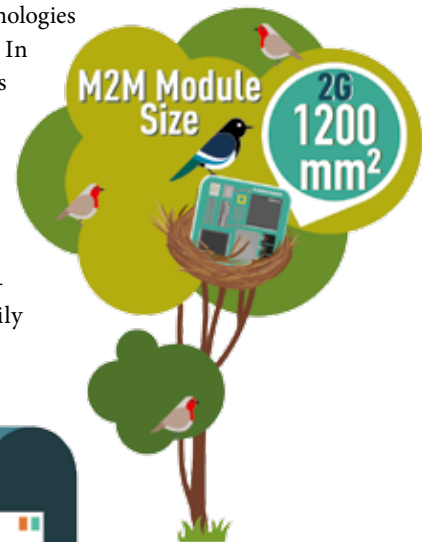


Robin Duke-Woolley,
CEO and Founder of
Beecham Research Ltd.

In 2004/5, the m2m business was often referred to as a 'cottage industry'. It was not actually that small but it was made up of a quite small group of not-very-big companies, none of which had an m2m business of particular size. Part of the problem was terminology. Companies in the Industrial sector had been doing remote monitoring of large assets and operating SCADA processes for quite some time but did not use the term 'm2m'. Similarly in the Healthcare sector, the Building sector and the Security sector. For all of these, the main connectivity type was fixed line rather than cellular – and 'm2m' had by that time become primarily associated with cellular.

There were also one or two substantial cellular connectivity projects. For example in Europe, January 2005 saw the start after many delays of Germany's

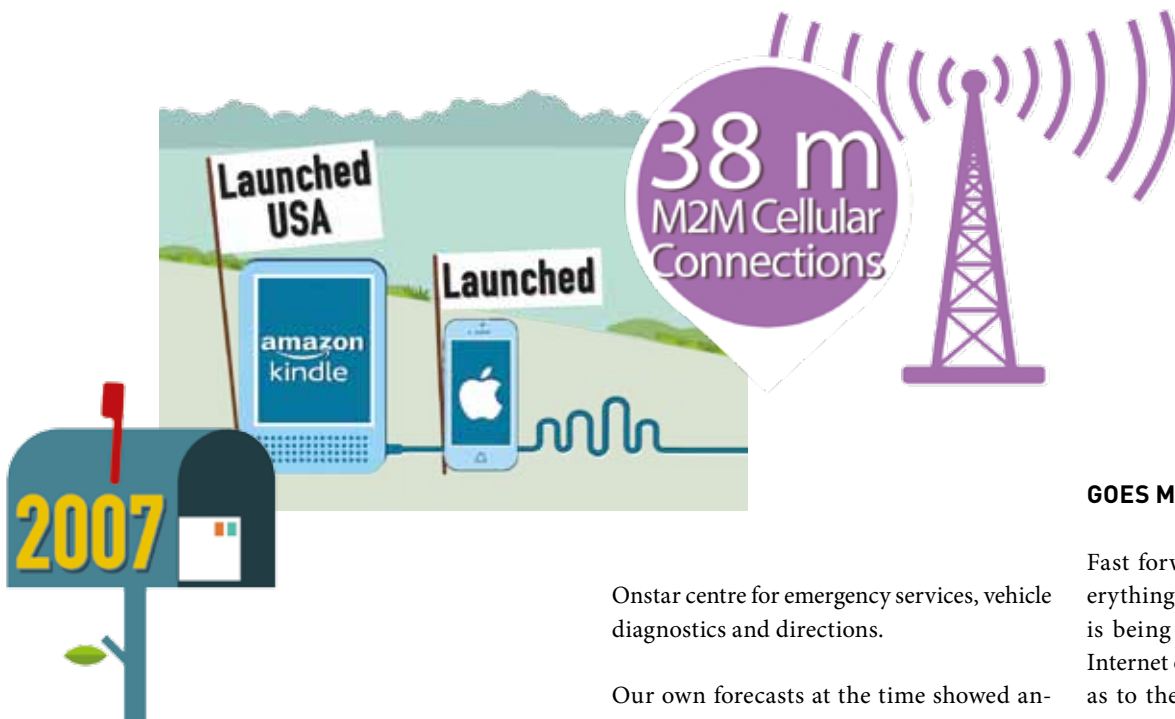
Toll Collect system of road tolling for trucks on German motorways. In Italy, electricity utility Enel completed its own deployment of smart meters to its entire customer base, which was substantially based on fixed line technologies but also used some cellular. In Scandinavia such projects were just getting going. In the US, the major m2m project was GM's telematics OnStar service that had been operating for several years using CDMA cellular technology, at that time primarily a way of calling an





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Download the poster "A Decade of M2M" under www.telit.com/10-years-of-m2m



Onstar centre for emergency services, vehicle diagnostics and directions.

Our own forecasts at the time showed annual cellular module shipments of under 6 million units in 2004, rising quickly to over 9 million in 2005 – all 2G, which was still relatively expensive.

Who was driving the market then? Mainly the cellular module vendors, particularly supported by airtime resellers in Scandinavia, UK and US. Siemens Wireless Modules of Germany was worldwide market leader, followed by Wavcom of France – which had just switched from its main business of selling mobile handset kits to the AsiaPac region. Telit, in the process of converting itself from an Italian mobile handset supplier to making m2m modules, was shipping less than 0.5 million modules per annum.



GOES MAINLINE . . .

Fast forward to 2014/15 and virtually everything has changed. Even the term 'm2m' is being routinely substituted with IoT – Internet of Things. Indeed, debate continues as to the differences between the two, although it is now increasingly accepted that both terms are relevant and apply to different things – but with both forming the rapidly developing Connected Devices market.

Mobile Operators (MNOs) were always involved with m2m but became increasingly interested in it from 2007/8. Vodafone was the first operator in Europe to establish a substantial, dedicated business unit focused on m2m in 2009 and was quickly followed by others. In the US, AT&T announced commercial availability of an m2m platform service with Jasper Wireless, also in 2009. In the same year, Beecham Research also undertook its first study of m2m platform services – dubbed m2m Service Enablement Services (SES) – and defined two levels for these: connectivity and application support. This work has continued since then and indicates that the number of m2m platforms covering both types has now grown from less than 10 in 2004/5 to over 130 today. Indeed some would say that number today stands at over 200, but many of those are not commercial offerings.



This high number provides an indication of how the m2m market has developed in that time. Although the annual shipment of cellular m2m modules is now a factor of 10 times the number a decade ago, the focus in the market has shifted from the hardware that provides the connections to the software and services that deliver the value. Wavecom was acquired by the larger Sierra Wireless in early 2009 and Siemens Wireless Modules, having become Cinterion, was acquired by the much larger Gemalto in mid 2010. Meanwhile, Telit grew its own m2m modules business by more than a factor of 20 times in revenue terms and more than 25 times in terms of modules shipped. All three of these also augmented their hardware offerings with service platforms, with Telit going further to offer a one-stop service for OEMs that includes connectivity as well.

BECOMING A NECESSITY . . .

In recent years this greater focus on software and services has drawn in new market players throughout the m2m value chain. Semiconductor vendors, network infrastructure suppliers, middleware and application software vendors, system integrators and new service providers are now actively involved in m2m market development. Each of these is helping to bring forward new application opportunities.

For example, the higher visibility of MNOs in the market from 2007/8 encouraged more OEMs to build cellular connectivity into their products. 2015 will see not only most car manufacturers offering built-in Connected Car services, but an increasing trend for these to be fitted with 4G as standard. The new market players are helping to open up other areas such as Smart Homes, Smart Cities, Smart Healthcare.

In 2004/5 m2m was an option. Now it is everywhere and becoming a necessity.



Robin Duke-Woolley, Founder and CEO of Beecham Research, has 35+ years experience in the telecom/IT industry, from General Management in international technology vendor companies to analyst, consultant and internationally recognized thought leader in m2m/IoT.



PHYSICS

SHORT BREAK

ISLAND

BIFURCATION

THE DELTA
IS WHERE THE
RIDGES DIVIDE

THE CORE
OF THE
FINGERPRINT
PATTERN

RIDGE END

INTERNET OF THINGS IN POLITICS



THE INTERNET OF THINGS – A NEW HOPE FOR EUROPE

In the Internet of Things (IoT), any physical and virtual object can be connected to other objects and to the Internet, creating a fabric of connectivity between things and between humans and things. The Internet is already the most complex existing artifact, but it remains virtual. The IoT goes beyond that and offers to merge the physical and the virtual worlds into a new smart environment, which senses, analyses and adapts, and which makes our life easier, safer, more efficient and more user-friendly.

The IoT promises to connect smart devices everywhere, from the fridge to the car, from the home to the hospital to the city. Connected devices will be powered by intelligence (embedded or in the network) that delivers new services and applications. These applications will offer significant benefits like helping users save energy, reduce traffic jams, increase comfort, and get better healthcare and increased independence. This will, in turn, generate growth and jobs, and boost competitiveness.

This vision is not science fiction; it's around the corner. The number of IoT connections within the EU is estimated to increase from approximately 1.8 million in 2013 to almost 6 billion in

2020⁽¹⁾. A series of announcements – like the acquisition of Nest Labs by Google for \$3.2 billion, the launch of Samsung Gear, health-related wearable devices, and the development of Smart Home features into Apple's iOS – have made IoT an increasingly tangible business opportunity. Forecasts have been consistently on the high side. For instance, Cisco estimates that the Internet of Things has a potential value of \$14 trillion.

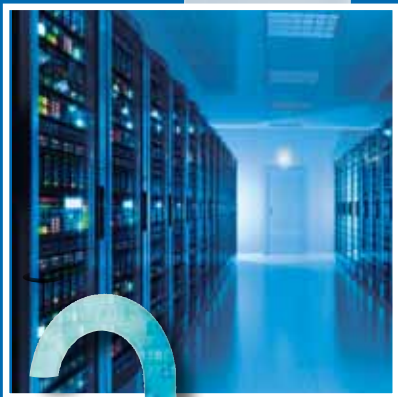
From the European Commission's point of view, it would be a strategic mistake not to take up the challenge to become a leader in the IoT space. Europe has today a unique opportunity to use IoT to rejuvenate its industry, deal with its aging population and transform its cities into innovation hubs. The EU has already made massive investments in IoT Research and Innovation, notably in the areas of embedded systems and cyber-physical systems, network technologies, semantic inter-operability, operating platforms, security, and generic enablers. A series of demonstrations have been produced,



Neelie Kroes,
Vice President
of the European
Commission and
Commissioner for
the Digital Agenda

⁽¹⁾ IDC and TXT Solutions (2014), SMART 2013/0037 Cloud and IoT combination, study for the European Commission.

INTERNET OF THINGS



ranging from connected toys to smart parking to agri-business. Research results are now feeding into innovation, and a series of components are now available, which could usefully be exploited and enhanced by the market.

Furthermore, Europe has leading industry players in all IoT areas. The IoT competencies in Europe are substantial with a developed eco-system including market leaders on smart sensors (Bosch, STMicroelectronics), embedded systems (ARM, Infineon), software (Atos, SAP), network vendors (Ericsson), telecoms (Orange) and application integrators (Siemens, Philips), as well as agile SMEs with a huge growing potential (Zigpos, Libelium, Enevo).

However, there are still a number of challenges before the IoT can expand and reach maturity. These challenges may be of a technical nature, in terms of security, reliability, complex integration, discoverability and interoperability. Other issues may be related to the acceptability of IoT applications by users and by citizens, for example privacy, liability

and security. There are also obstacles to private investment, like uncertainty about business models and monetization of the IoT and, more generally, enduring market partitioning and coordination problems.

The Commission is currently considering how to best support IoT Research and Innovation. We recently started a program to boost the IoT eco-system across silos, with a budget of 50 million euros. Another opportunity could be around pilot projects testing the deployment of large amounts of sensors, or the interoperability of different applications. These pilots would appropriately fit with the objectives called for in the European Innovation Partnership for Smart Cities, eHealth and in the Electronics Leaders Group. Large-scale pilots could also be employed to investigate acceptability by users

and business models. This could play an important role in addressing security and trust issues in an integrated manner and could contribute to certification and validation in the IoT area. A consultation was recently launched to further investigate these areas.

So, I believe that the Internet of Things has a large potential for Europe and I am confident that the new Commission, under the leadership of Jean-Claude Juncker, will make it one of its flagships for growth and for the Digital Single Market. There is still a lot to do, but together we can create a vibrant connected continent.

www.ec.europa.eu



Neelie Kroes was born in 1941 in Rotterdam. From 1971 to 1989 she worked in Dutch politics, including as minister for postal and telephone sectors. In 2004 she became the EU's Competition Commissioner, and, in 2010, Vice President of the Commission responsible for the Digital Agenda.





Yang Jing,
Chief Scientist at the China
Mobile Research Institute



REBUILD THE ORGANIZATIONAL STRUCTURE OF THE TELEMATICS INDUSTRY

China's Ministry of Industry and Information Technology (MIIT) has announced that in 2014 the size of the IoT industry surpassed RMB600 billion (US\$100 B) and that the industry will continue to maintain high-speed growth.

CHINA'S IOT IN HEALTHY DEVELOPMENT

The Chinese IoT industry has evolved into a comprehensive industry ecosystem that includes chips, components, software, system integration, telecommunication operation and services. Intelligent transportation (Telematics), intelligent industry, intelligent environmental protection, intelligent homes and intelligent healthcare (e.g. wearable devices) have become important areas. The industry is gradually entering a "sensible" period from its initial "impatient for success" stage.

The country has achieved positive results in the areas of industry, technology, standards and applications. But we still need to leverage our experience to expedite development using the principle of "driven by innovation; led by application; collaborative development; and being secure and

controllable". We should also continue to promote the implementation of the national strategy, improve innovation capability, foster a core group of leading corporations, enhance public service capability, improve security assurance system, and speed up the development of applications in such areas as industrial IoT and Telematics.

TELEMATICS IS ONE OF THE KEY IOT APPLICATIONS

IoT is not an isolated industry, but rather, a reflection of specific application sectors, and telematics applications deserve particular attention.

Telematics has been developing very rapidly in the international market as a result of the enormous impact the Internet has made. It has triggered fundamental transformation and complete changes in technology and business models. But in

China, telematics involves multiple sectors including automobile, transportation and IT – areas that are divided – so one can imagine the challenges involved. That is the current status of the Chinese telematics.

REBUILD THE ORGANIZATIONAL STRUCTURE OF THE TELEMATICS INDUSTRY

To achieve truly proprietary telematics development in China, the organizational structure of the industry must be rebuilt based on the characteristics of the Chinese market and the industrial structure. Therefore, a forceful someone has to consolidate these resources and to drive the rebuilding of the industry's organizational structure. In the U.S., this third party is what is known as a telematics application service provider, or m2m service provider. To drive telematics' development a similar Chinese organization is needed.



Yang Jing is Chief Scientist at China Mobile Research Institute and member of the Economic Experts Committee of the Ministry of Industry and Information Technology (MIIT).

Currently the telematics service providers operate as isolated islands, as are the car manufacturers and the administrative government bodies. The integration of these isolated islands requires new technologies, for example cloud computing and 4G communication technology. Now we have apps and the cloud, so access to data of the same format is enabled, thereby ensuring the benefits to all parties. This does not come via a standard data interface or data sharing:

instead it is provided through a server in the cloud and an app on the client device.

Telematics must find a common goal, a development vision that brings all people together and this common goal is security. The “Secure Telematics” concept is very important because: it meets the expectations of all participants; it is a new market that does not divide up any existing markets; and it can bring huge value to the society. This is a new market that benefits

multiple parties. Telematics has entered the first stage. Subsequently, secure telematics will present a vision: the realization of V2X (vehicle-road-people collaboration) will bring new technology developments, new operating models and new markets. The most attractive aspect of V2X is that it focuses on security, and everyone believes in security.



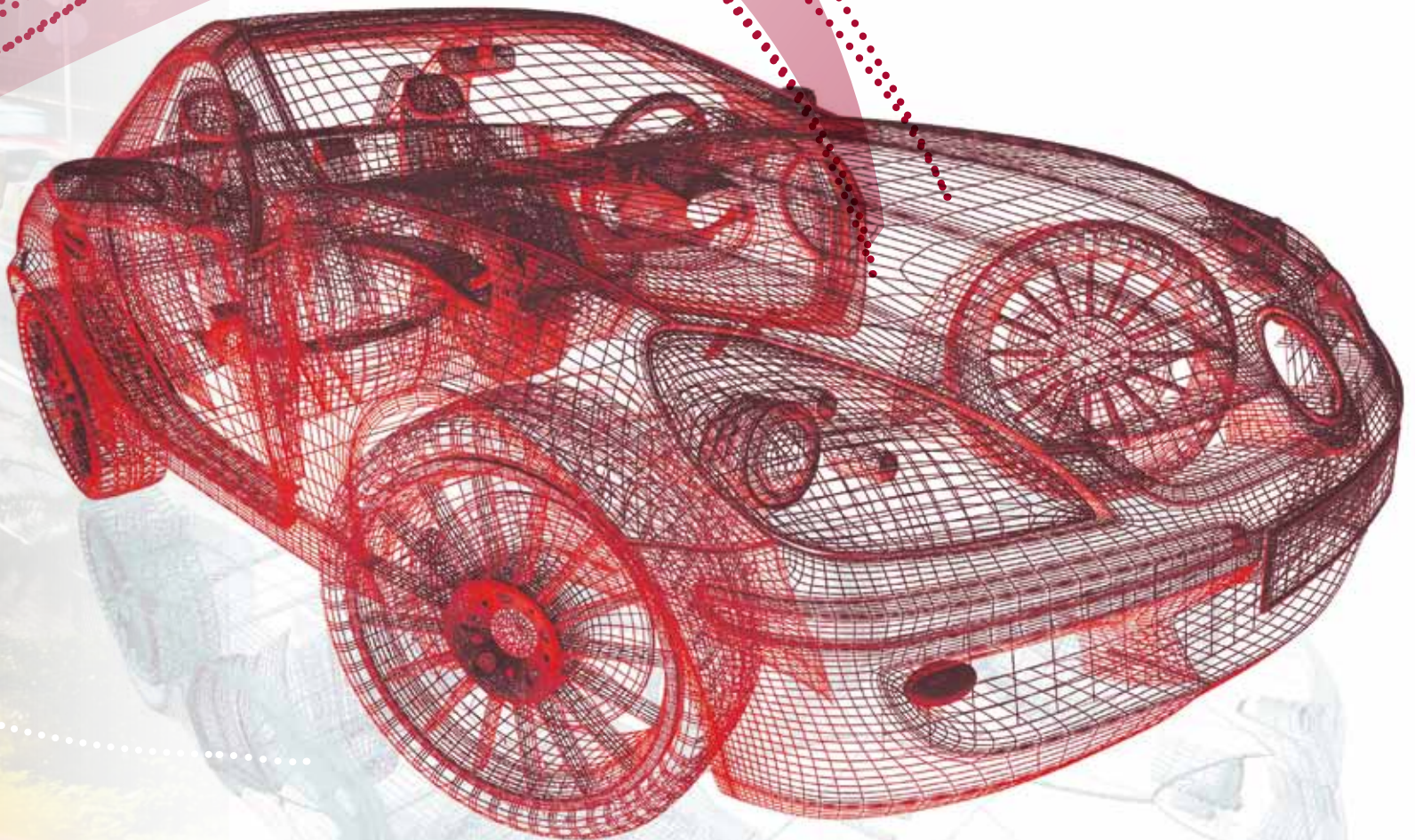
The key message for telematics development is that we don't care if the industry is an open or a monopoly, but it must be marketed, i.e. a new market must be created. What is the new market for automobile industry? The answer is security. Demand is not a problem, because everybody needs security. But how do we convert it into a marketable product and sell it to everybody? How to create value for the society and benefit all parties on the industry's chain?

We should no longer create closed systems. Both in-vehicle infotainment products and the vehicles ECUs (electronic control units) are open source, and this is the result of the influence that the outside forces have had on the car manufacturers. All cars must be fitted with V2X devices, but who pay the bill? The American approach was through legislation, but I think all problems will be solved if you've made the best navigation, the best application, and made it as good as what Audi has done, then also include DSRC (dedicat-

ed short range communications). It doesn't matter when it will become popular, a platform needs to be built first, and V2X is both a platform and an infrastructure.

The core issue here is how to build a collaborative environment and provide a terminal free-of-charge to each car. Unsurprisingly, the American insurance companies have begun to offer free terminals.

www.miit.gov



INTERNET OF THINGS IN SCIENCE



THE IoT: A CONCEPT, A PARADIGM, AND AN OPEN GLOBAL NETWORK



Dr. Ovidiu Vermesan,
 Chief Scientist
 SINTEF ICT and
 Coordinator of
 the IoT European
 Research Cluster

The Internet of Things (IoT) is a concept and a paradigm. It considers pervasive presence in an environment of things/objects that interact with each other and cooperate with other things/objects in order to allow/provide new applications/services and reach common goals

The IoT is also a network of physical objects that contain embedded software to communicate, using wireless and wired connections plus unique addressing schemes, and sense or interact with their internal states or the external environment. The integration of efficient wireless network interfaces, improved sensors, low power and cheaper processors, plus numerous start-ups and established companies developing the necessary management and application software has finally made the concept a mainstream reality.

The Internet of Things exploits synergies generated by the convergence of Consumer, Business and Industrial applications based on Internet. This creates the open and global network that connects people, data, and things/objects. In ad-

dition, it leverages the cloud to connect smart things that sense and transmit a broad array of data, allowing creating/providing new services that would not be obvious without this huge connectivity level and analytical intelligence. The use of IoT platforms is being driven by enabling technologies such as cloud, smart things, and mobility.

The cloud enables a worldwide infrastructure to facilitate the generation of new services, allowing anyone to create content and applications for global users. Networks of smart things connect objects globally and maintain their identity online. Mobility allows connection to this global infrastructure at anytime and anywhere. The result is a globally accessible network of smart things, users, and consumers, who can create new businesses, contribute with a content enricher, generate and purchase new services.

IoT platforms also rely on the power of network effects. As they allow more things, they become more valuable to the other things as well as the users that make use of the services generated. The success of a platform strategy for IoT can be determined by connectivity, ease of use and the knowledge/information/data flow.

To accommodate IoT's diversity there is a heterogeneous mix of communication technologies, which need to be adapted/improved in order to cope with the different IoT requirements such as energy

efficiency, interoperability, security, reliability and cost effectiveness.

In this context, it is possible that the level of diversity will be scaled to the managed connectivity technologies that: address the needs of the IoT applications; are adopted by the market; have already proved to be serviceable, and are supported by a strong technology alliance.

DEFINING A COMMON VISION FOR IOT

The IERC – IoT European Research Cluster – is bringing together EU-funded projects with the aim of defining a common vision of IoT technology and addressing European research challenges. The rationale is to target the large potential for IoT-based capabilities; coordinate/encourage the convergence of ongoing work on to tackle the most important issues; and build a broadly based consensus for the realization and deployment of the IoT technology in Europe in order to keep the leadership and the competitive advantage on the world market.

The IERC defines the IoT as “A dynamic global network infrastructure with self-configuring capabilities based on standard and interoperable communication protocols where physical and virtual “things” have identities, physical attributes, and virtual personalities, use intelligent interfaces, and are seamlessly integrated into the information network.”



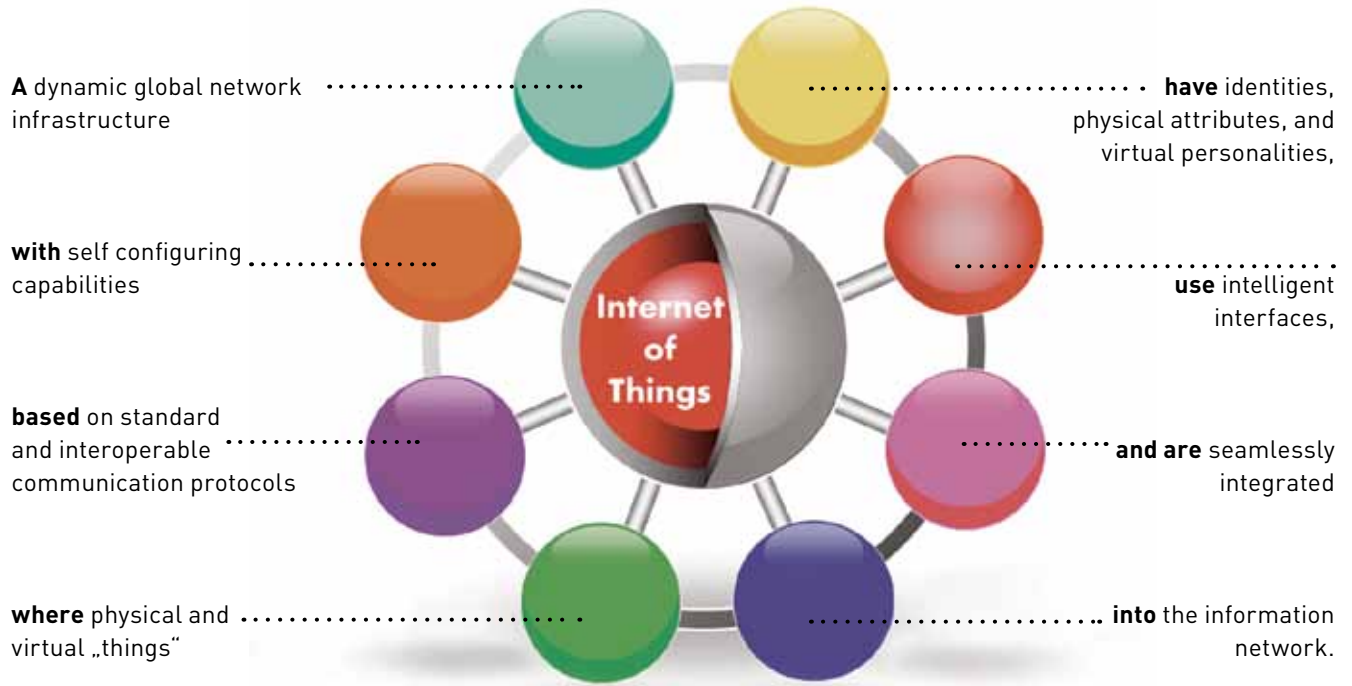
The development of enabling technologies such as nanoelectronics, communications, sensors/actuators, embedded systems, cloud networking, network virtualization and software will be essential to provide smart things with the capability to be connected at any-time, anywhere. This will also provide an important future for IoT product innovations that will influence many different sectors (consumer, industrial, business, etc.).

Some of these technologies, such as embedded or cyber-physical systems, bridge the gap between cyber space and the physical world of real things, and they are crucial in enabling the IoT to deliver its vision and become part of bigger systems in a world of “systems of systems”.

Mobile data traffic is projected to double each year, and mobile operators will find it increasingly difficult to provide the bandwidth required by customers. In many countries there is a need for ad-

ditional spectrum to be assigned as the spectral efficiency of mobile networks is reaching its physical limits. The proposed solution is the 5G which includes the seamless integration of existing Wi-Fi networks into the mobile ecosystem. This will have a direct impact on IoT ecosystems. In this context, the industry will be able to leverage hardware, the ubiquitous nature of connectivity, big data and analysis in order to acquire the additional revenue associated with the Internet of Things.

The chips designed to accomplish this process are known as “multicom” chips. Wi-Fi and mobile communications are expected to converge and the architecture of mobile devices is likely to change. The mobile network is expected to take control of the management, discovery and routing functions, which means that the mobile devices are connected to this network component; alternatively these functions are integrated in a single silicon package. As a result of this architectural change, an increasing share of the integration work is likely done by baseband manufacturers (ultra low-power, highly integrated solutions) rather than by handset producers.



The major objectives for the IoT are the creation of smart environments/spaces based on self-aware things (for example: smart transport, products, cities, buildings, rural areas, energy, health, living, etc.) for new and innovative applications for climate change mitigation, food industry, energy efficiency, mobility, digital society and health care.

One challenge is exchanging the data from and among the things/objects in an interoperable format. This requires creating systems that cross vertical silos and harvest the data across domains, which unleashes useful IoT applications that are user centric, context aware, and are able to create new services by communication across those verticals.

These exchange and processing capabilities are an intrinsic part of the IoT concept and they can be applied to applications in areas such as the Internet of Energy (IoE), the Internet of Lighting (IoL), the Internet of Buildings (IoB), and, in a city context, the Internet of Vehicles (IoV).

The final aim is to create a city-centric ecosystem comprising state-of-the-art and viable technologies which apply the IoT, IoE and IoV concepts to increase the city efficiency by enabling unobtrusive, adaptable and highly usable services at the network-edge, gateway and cloud levels.

In this context stimulating the creation of IoT ecosystems (comprising of stakeholders representing the IoT application value-chain: components, chips, sensors, actuators, embedded processing and communication, system integration, middleware,

architecture design, software, security, service provision, usage, test, etc.), integrating the future generations of applications, devices, embedded systems and network technologies and other evolving ICT advances, based on open platforms and standardised identifiers, protocols and architectures is of paramount importance.

In addition the deployment of IoT Large Scale Pilots to promote the market emergence of IoT and overcome the fragmentation of vertically oriented closed systems, architectures and application areas that address challenges in different application areas by bringing together the technology supply and the application demand sides in real-life settings is the next important step to demonstrate and validate the technology in real environments.

www.internet-of-things-research.eu

Dr. Ovidiu Vermesan is Chief Scientist at SINTEF ICT and holds a PhD in microelectronics and a Master in International Business. He has over 27 years experience in the area of microelectronics/nanoelectronics.



Peggy Smedley,
Connected World
Magazine

CYBER AND THE APOLLO MISSION

ENCOURAGING EVERYONE TO PROTECT THEIR PRIVACY AND
PERSONAL DATA

In 1969, when man first landed on the moon as part of the Apollo Mission program, otherwise known as Project Apollo, as part of NASA (National Aeronautics and Space Administration), it lifted a nation. While those were exciting times, many believe we need to see the country taking on cyber and the threats that cyber brings, almost like an Apollo Mission.

Protecting your personal data is perhaps the greatest call-to-action today to stop some of the most brazen attacks on global corporations.

Hackers have shown they will stop at nothing to breach a perimeter whether it means attacking a connected car, a utility, a financial institution, or even accessing a medical file. Cybercrime is increasing every day. The only way to stop this barrage of attacks is to build a fortress stronger than the efforts of the criminals trying to storm the castle explains one cyber expert. "Prevention needs to be just as strong as the criminals who are determined to make the breach," explains Scott Schober, security expert and president of Berkeley Varitronics.

In December of 2013, a Pew Research poll showed 70% of Americans view cyber attacks against the U.S. as a major threat. That number was comparable to other potential threats such as Islamic extremist groups at 75%, Iran's nuclear program at 68%, and North Korea's nuclear presence at 67%.

Now, based on how much the world has changed and the impact digital technology has had on it, you would think that shoring up these entities would be of the highest priority.



NEXT STEPS

So, what, if anything, can be done to stop this? There is clearly much work that needs to be accomplished to stay ahead of the bad guys. First and foremost, vigilance needs to be the watchword in keeping up with what is happening.

Industry experts say businesses and organizations need to be aggressive in their actions toward protecting their data. We have talked about how little companies are doing to shore up their tech situations, which causes concern for customers and employees. We are past the point of waiting for a major entity to get hit before acting, already we have seen millions of accounts compromised and now we are talking about millions of dollars in costs to recoup the losses in both customer confidence and shoring up internal systems.

Major businesses are getting broken into and they are not the only ones. Small businesses are not immune to cyber threats either. In most cases they may be less equipped to handle a breach. The PWC survey revealed businesses with 500 or less employees have only one person responsible for information security. It is a problem for all of us and one person on a staff makes keeping the bad guys at bay even more challenging.

If there is one common theme we keep hearing from all the experts, it's the need for more education. The more we understand what's happening, the better prepared we can be to address the cyber attacks.

Perhaps the ones who will be able to get their hands around this the best will be those who are growing up in this age of technology. It seems that the younger generation is starting off younger and younger with technology,

and, perhaps, might be best able to deal with these situations when they get older.

Children in middle schools in Huntsville, Alabama, for instance, are getting an introduction to cyber security. The North Alabama Chapter of Information Systems Security Assn. has developed a program called the Madison City Cyber Outreach program. It's a 10-week training program for children to learn IT security, operating systems, and more.

BUSINESS EDUCATION

Obviously, from a personal standpoint this is very serious as criminals now have information about you and can try to access your accounts. From the business side, this can also have serious repercussions. According to a study done by the Ponemon Institute, businesses can suffer greatly due to cyber breaches: customers stopped their relationship with a company that had a data breach.

Education is a key component to cyber security. There is no better time than the present to ensure the safety of our critical infrastructures and to protect our important information and resources.

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BUSINESS MODELS FOR THE INTERNET OF THINGS



Prof. Dr. Elgar Fleisch
and Dr. Markus Weinberger



Digital business model patterns are becoming ever more significant in physical industries because they promise huge economic benefits. The key to this is the Internet of Things, which allows physical products and digital services to be merged into hybrid solutions.



THE IoT – PRODUCTS-SERVICES LOGIC

Thing	+ IT { Hardware Software }	= Thing-based Function { Physical Local }	+ IT-based Service { Digital Global }
		Time	E-Call
		Stock box	Replenishment
		Ride	Fleet Management, Leasing, etc.
		Temperature	EE Consulting, Cost Savings, Remote Control
		Drive	Insurance, Traffic, Charging, Theft, Behavior
		Light	Security, Heating Control, Comfort
		Whatever the thing can	Installation Guide, Maintenance Guide, Maintenance History, Active Maintenance Schedule, Repair Guide, Replenishment Service, Warranty Service, Bill, Insurance, etc.

In the IoT, classic products are charged with a bundle of new sensor-based digital services and positioned with new value propositions. These business models, which come in a variety of forms, are defined as Digitally Charged Products.

Their components range from free digital services offered with the product to inexpensive products financed through digital services with a high margin.

Further examples of Digitally Charged Products are: products that prevent counterfeits using a sensor-based digital handshake, products that themselves become sites of digital sales and marketing services, products that independently place orders on the Internet, and "smart" things that can transmit data about their own status or their environment in real time.

The general logic and details of the individual components of Digitally Charged Products, together with an abridged video version, can be found at http://www.iot-lab.ch/?page_id=10543



In contrast to Digitally Charged Products, with sensor as a service, the data itself, rather than the data-generating products or the resulting services, becomes the central focus. It is the primary currency to be earned.

Measurements from the physical world are vertically integrated and collected, saved and processed not just for a single specific application, but also for a whole range of potential applications – for an ecosystem, in other words.

ENTREPRENEURIAL CHALLENGES IN IMPLEMENTING IoT BUSINESS MODELS

Companies in the manufacturing industries face particular challenges when implementing Internet of Things business models. The core issue is establishing a balance between the strategic and the operational characteristics of products and services and maintaining a sustainable optimum relationship between the two.

The differing characteristics of physical and digital products are particularly noticeable in product development. In the world of the

Internet, agile development processes are the norm today. In the hardware business, however, and in the world of embedded computing as well, other conditions apply. Here, for example, an error in a product that has already been widely sold usually results in an extremely costly, image-damaging recall action. These differences due to technology and economics have led to divergent cultures in hardware and software departments.

The technical delta cannot simply be defined away. However, knowledge of the other side – hardware or software – can be built up. This gives key employees the necessary openness for profitable exchanges and a willingness to adopt best practices from the other's disciplines.

HANDLING APPLICATION DATA

In most instances, hybrid solutions mean that the party offering them must have access to data that is constantly generated from application of the solution. This is new for classic production companies and brings with it many opportunities, but also some risks. The opportunities include input that is based on digital data so it is fine grained, unaltered, and complete and can be used to enhance the solution and/or develop new products.

The challenges relate to all the issues concerning the user's informational self-determination, in particular those regarding use in compliance with regulations and data security.

It is beyond debate, however, that every hybrid solution needs a clear conception, transparent for all involved and reliably implemented, of how it handles application data that is generated by the customer. That is the only way that both the customer and the supplier can derive long-term benefits from the data.

SUMMARY

Every physical atom that can profitably be replaced by a bit will be replaced. Digitization of hardware functions is advancing. As demonstrated, the IoT offers manufacturing industries the opportunity to develop new business models – and therefore to respond with agility to global challenges. Details of research into "Internet of Things business models" can be found here: www.iot-lab.ch/ and www.im.ethz.ch/.

Prof. Dr. Elgar Fleisch is Professor of Information and Technology Management at the University of St. Gallen (ITEM-HSG) and ETH Zurich (D-MTEC). In his research, he and his team aim at understanding and designing the ongoing merge between the physical and digital world, a vision that was recently coined the "Internet of Things / Cyber Physical Systems."

Dr. Markus Weinberger is the Director of the Bosch Internet of Things & Services Lab at the University of St. Gallen. During the last 15 years at Bosch he gained experience in such different fields as driver assistance systems, internal auditing and engineering services.

IoT: TIME TO THINK ABOUT OPTIMAL NETWORK ENVIRONMENTS



Jung Keunho,
 ATLAS Research & Consulting

Mobile carriers, device vendors and IT service providers started pursuing m2m business several years ago. The focus was on smart everyday lives and business process optimization through 'Things that Think' and network connections. m2m, however, was unfamiliar to the public at that time, despite its success in some industrial sectors, and had not reached an environment that could fully exert its potential.

The environment, however, began to change as we went into 2014. First of all, the IT ecosystem began to get richer, as a more extended concept called the Internet of Things (IoT) began to be discussed in the industry. It was identified by leading IT firms as a new important source of income that will lead the growth in future. In particular, with wearable devices, smart cars and smart homes gaining wider

adoption and greater awareness, the public has begun to have a better understanding of what IoT can do.

This means that IoT has come over the chasm and the market is finally entering the popularization stage – despite some differences across sub-sectors. The Korea Information Society Development Institute forecasts that IoT will add 40 billion dollars to the economy in 2014 and 1.9 trillion dollars by 2020.

What is it that makes this growth possible? From the perspective of devices and services, one reason could be the emergence of platforms that emphasize openness. At the start of 2014, not only players that have been professionally engaged in m2m and IoT business, but also some big names in the smartphone market, such as Google and Apple, expanded into IoT sectors such as wearable devices and smart cars. This has led to the appearance of various sensor-based apps and devices. Other companies and organizations have contributed to building a foundation for the explosive growth of the IoT market by forming various standardization bodies that emphasize compatibility.

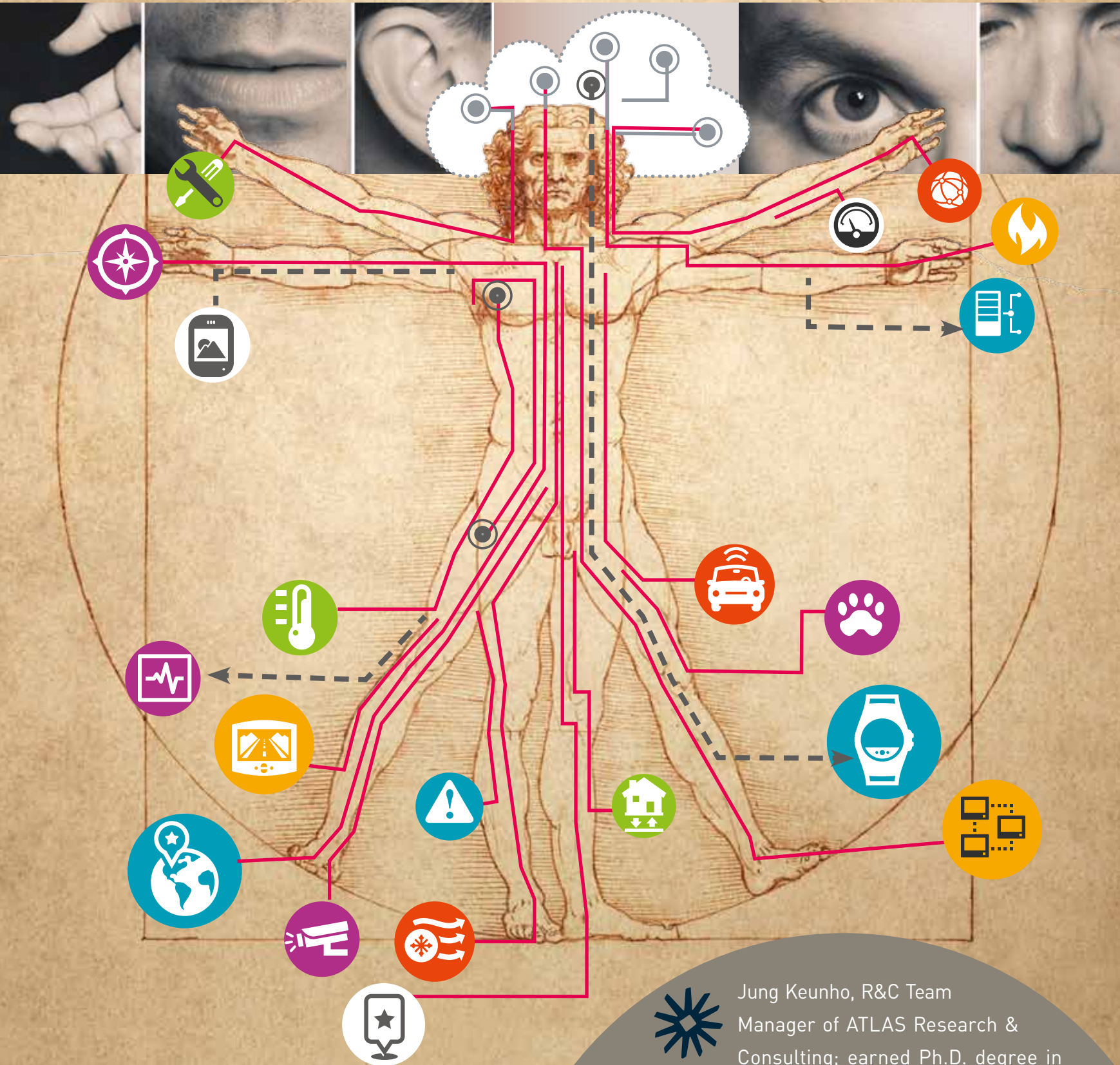
The core of the IoT is, however, to connect 'things' on the 'internet', meaning that using an infrastructure to ensure anytime, anywhere access is required in order to realize the po-

tential value of the IoT. Short-distance communication technologies, such as Bluetooth, Wi-Fi, and ZigBee, are already employed, but the importance of broadband communication technology will continue to rise with the increasing requirement of mobile devices and the growing interests in the IoT in remote or mountainous areas, i.e. poor communication environments.

In other words, when platforms and cloud infrastructure are established as the 'brain' of things; when sensors serving as the 'five senses' for contextual awareness; and when devices as the 'limbs' are widely available, interest in the networking sector, which serves as the 'blood' that brings things to life, will become even higher in 2015.

Consequently, governments will push to make policies in order to facilitate the upcoming era of IoT: for example, by allocating more frequency, and carriers will offer optimized combinations of devices, services, network and fee plans. Naturally, the role of communication modules that bring things to life, and that of Telit, who provides consulting on optimized networking configuration, will become even more important. More IoT devices and services based on the products and services of Telit will appear, allowing a new 'smart revolution' to get closer.

www.arg.co.kr



Jung Keunho, R&C Team
Manager of ATLAS Research &
Consulting; earned Ph.D. degree in
Management Engineering from KAIST; interested in the
new role of telcos in IoT era, and conducted new service de-
veloping projects and market researches with Korean mobile
operators and device manufacturers at ATLAS over 10+ years.



INTERNET OF THINGS IN INDUSTRY



WELCOME TO THE FOURTH INDUSTRIAL REVOLUTION

The Internet has brought about lasting changes in social collaboration. It will also change industrial value creation over the long term through collaboration between people and machines and between machines and machines.

A fourth industrial revolution is starting in the production sector. The first industrial revolution was driven by the steam engine, the second by mass production and the third by computer-assisted machines – the fourth, "Industrie 4.0", is being shaped by networking and the Internet. IT and telecommunications are becoming more closely interwoven with the manufacturing industry than ever before, particularly in the machinery tool and plant engineering, electronics engineering and production like the automotive sector.

The goal is flexibility. This is the only way to cope with ever shorter product cycles that require factories to be constantly modified, volatile markets with fluctuating demand, and increasing product variants with small batch sizes, sometimes as small as a single unit. Industrie 4.0 will allow one-off items to be produced with all the cost advantages of mass production. Eventually the classic value chain is becoming a value network, because the constant supply relationships that have prevailed up till now no longer meet the requirements. In future, an Internet will develop that links things to each other and to people. The Internet is the steam engine of the 21st century.

As the country that traditionally supplies the world with factory equipment, the effects of Industrie 4.0 are being felt particularly strongly in Germany. Networking is a major opportunity for German industry. Its traditional core and internationally prominent position need to be defended and expanded. Germany's strengths lie in the technological interfaces between different industries. Just as a digitally refined smartphone was developed from the classic cellphone, so digitally refined goods, machines and systems are being developed with a cross-industry approach. These smart machines can then give rise to new, complementary service concepts, which offer excellent potential for improved or new business models.



Wolfgang Dorst,
Head of Department
"Industrie 4.0",
BITKOM e.V.







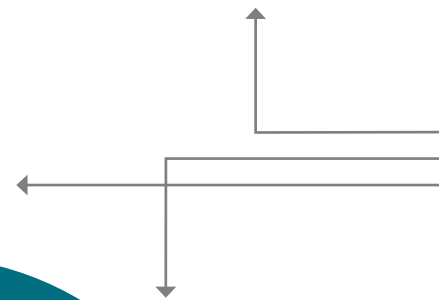
For Industrie 4.0, we need a robust Internet with universal broadband coverage and guaranteed latency times. For the connection between the real and virtual worlds, wireless networks are the key pathways for data transmission – particularly in cases where the goods, machines and systems have kinetic degrees of freedom. The availability of free frequency bands for communication that meets the real-time requirements of the machine control system is a key issue. Particularly important in this regard, for instance, are the frequencies known as TV white spaces.

Despite the growing number of sensors and embedded systems, the introduction of Internet Protocol version 6 (IPv6) addressed these issues directly. Industrial networking protocol diversity for industrial Ethernet and Fieldbus can be resolved by IPv6 as complement or substitute. All the data models developed in the industries that can continue to be used for IPv6 are being retained. The IPv6 protocol also extends the possibilities for data protection, data security and consumer protection, which is

another reason why it is a better option for Industrie 4.0, aside from the limited number of IPv4 addresses available.

As production, IT and the Internet grow closer together, our IT industry has four important contributions to make: We supply the infrastructure, the process know-how and software-intensive Cyber Physical Systems (CPS) – and we deliver them all reliably to the customer. Industrie 4.0 will radically transform an industrial nation such as Germany. At BITKOM, it is our social responsibility to help shape this transformation.

www.bitkom.org



Wolfgang Dorst is the Head of Department "Industrie 4.0" at BITKOM.

He has over 30 years' experience in the ITC sector and worked at Oracle, Sun Microsystems, Cisco Systems, Amdahl and Digital Equipment. He studied electrical engineering and began his career with an apprenticeship in precision engineering.

RUSSIA'S FLEET MANAGEMENT MARKET

The Russian market has three main segments. Today the commercial market is not associated with governmental projects. There are two major state projects – ERA-GLONASS and 12 t capacity vehicles.

COMMERCIAL MARKET

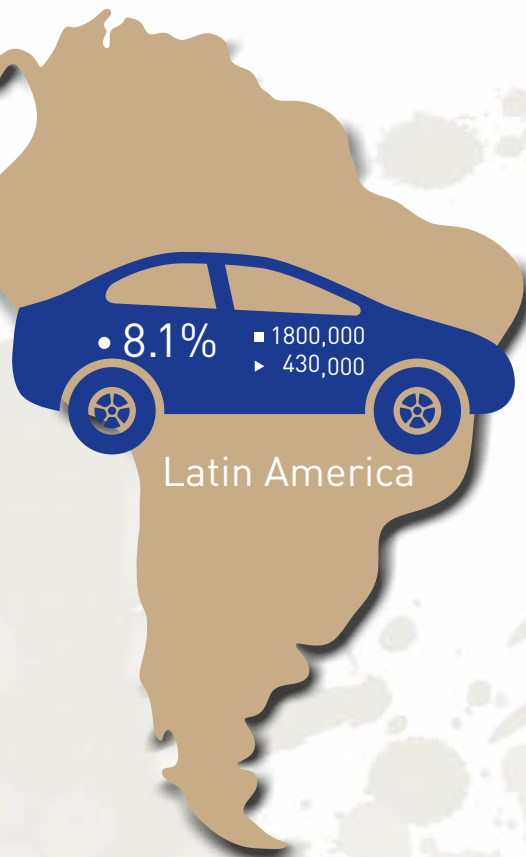
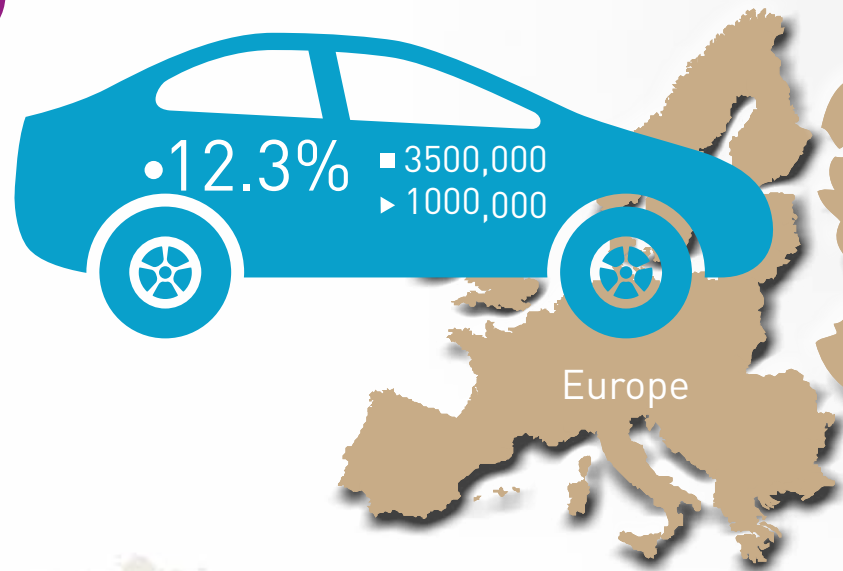
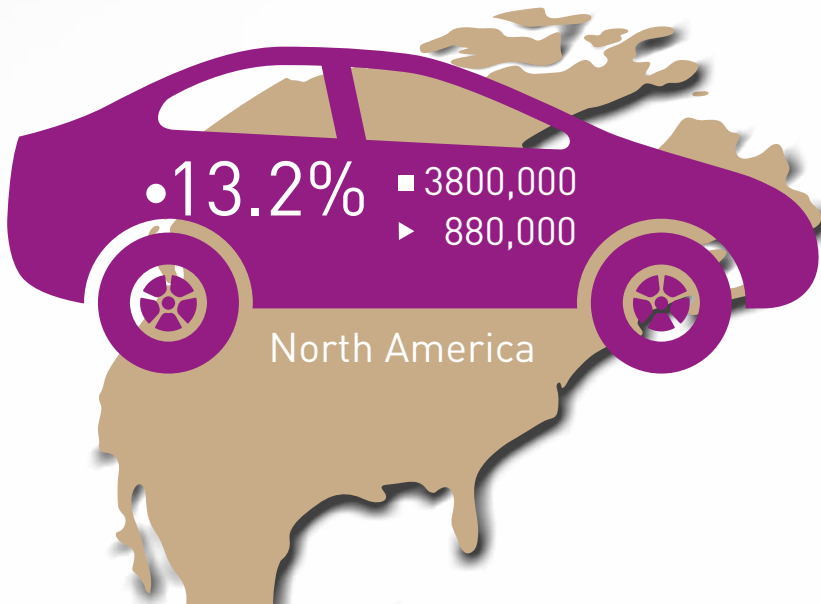
The commercial market of fleet management systems comprises about 400.000 installations a year. The average installation cost is \$ 800, so the market volume is \$ 320 million. The average monthly subscription fee for end clients is \$ 20 a month for one vehicle. The total volume of the market of equipped vehicles is about 1.15 million units. Comparisons with other markets, made by Berg Insight, are shown in the visual. The key feature of Russian fleet management systems is the application of monitoring systems based on high-precision fuel level sensors.

The penetration of fuel monitoring systems in fleet management is increasing. At the end of 2013 it came to 83%. They enable use of fleet management in non-traditional industries in other countries: construction, road machinery, locomotives and even stationary objects, e.g. diesel generators, cell towers, and heaters.

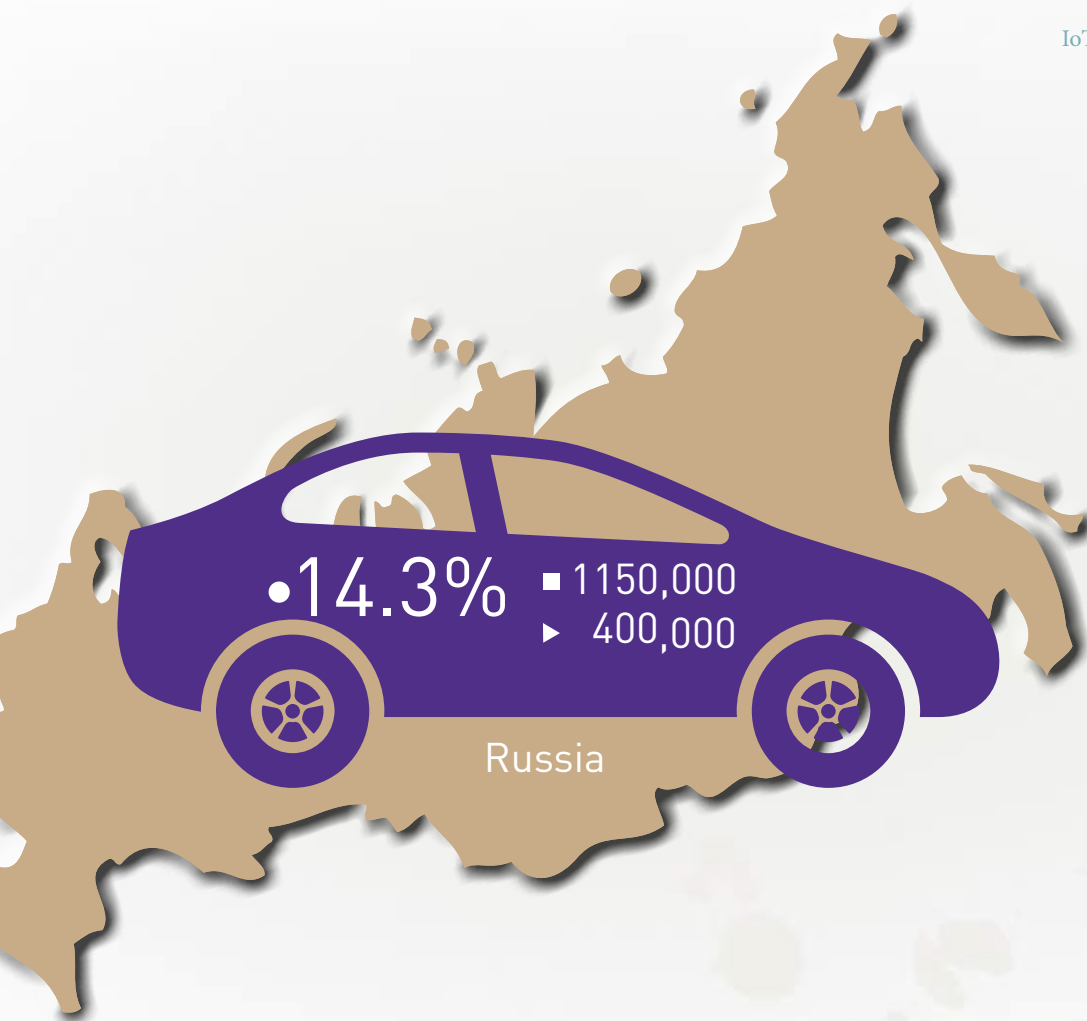
Russia is vast. Proximity of service to clients is a key factor for selection of a solution provider. This forces manufacturers to create partnership networks. The difficulty for foreigners to establish such networks in Russia means that there are no foreign solution providers. As for providers of on-board equipment, it is important to have technical support and simple logistics. Due to this, share of foreign suppliers is around 10% of the market.



Boris Pankov,
CEO Omnicomm



- MARKET PENETRATION
- SYSTEMS IN ACTIVE USE
- ▶ VEHICLES EQUIPPED IN 2013



Boris Pankov is an owner and CEO of Omnicomm company since 1998. From 1989 to 1993 He worked as a head of projects of satellite communication systems for military purposes. Afterwards he was a head of department of the service provider of Euteltracs (OmniTRACS) system.

ERA-GLONASS

ERA-GLONASS is functionally equivalent to the European eCall system. It comprises navigation and telecommunication terminals mounted on vehicles, an infrastructure of mobile operators, and emergency services. According to NP GLONASS, the system's operator representatives, the plan is to equip all new vehicles by 2017. The market will then reach about 2.5 million vehicles a year. The cost of on-board equipment for end clients is expected to be less than \$ 100, i.e. the market of installations on new vehicles will reach \$ 250 million.

The market of on-board equipment manufacturers is open, however, the rules are in place. The technical requirements are being specified. The procedure for manufacturers to enter is undergoing changes. In addition the information about the structure of the system's operator, the sources of funding and income are changing.

12 T CAPACITY VEHICLES

The project for the creation of a toll collection system from trucks weighing over 12 tons has been launched. The start of the project was postponed several times until the state appointed the executive – "RT Invest". As part of this project a countrywide infrastructure and on-board equipment for these trucks has to be created. To become suppliers and enter this market the players must be selected by "RT Invest". The terms of this project are not defined yet, although the country's budget already includes revenues from payment for travel on the roads in 2016. The state decided not to attract foreign players to establish this fee collection system.

OTHER FACTORS

It became mandatory to equip commercial vehicles with tachographs. About 4 million vehicles fall under this ruling, however the rules had not been thoroughly examined. That resulted in strong dissatisfaction among the carriers and the procedure was delayed. If ERA-GLONASS and 12 t capacity vehicles projects are implemented large numbers of vehicles will have to be equipped. Russia is experiencing economic slowdown, therefore the government might reduce the size of the investments in these projects.

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TELEMATICS: ITS ROLE IN ROAD SAFETY AND VEHICLE DIGITIZATION IN INDIA



Sirish Batchu,
Head – Infotonics
Technology &
Advance Electronics,
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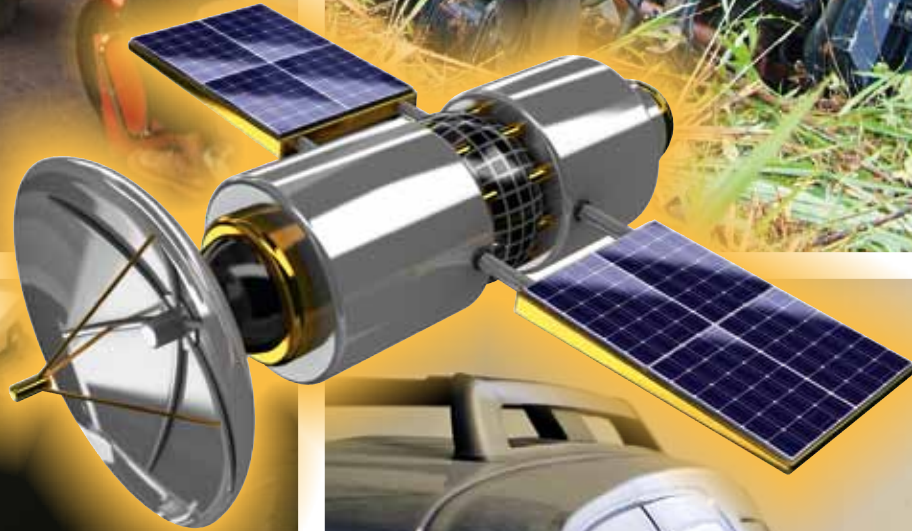
Telematics is one of the fastest emerging sectors in India. It's been driven by factors such as the increase in the number of accidents, rising vehicle thefts and the demand for navigation services. Although the Indian telematics market is in an infancy stage, it offers high growth potential for the automobile industry. The integration of m2m telematics applications helps the automobile industry in various ways, e.g. a lower number of road rages, vehicle tracking and many others.

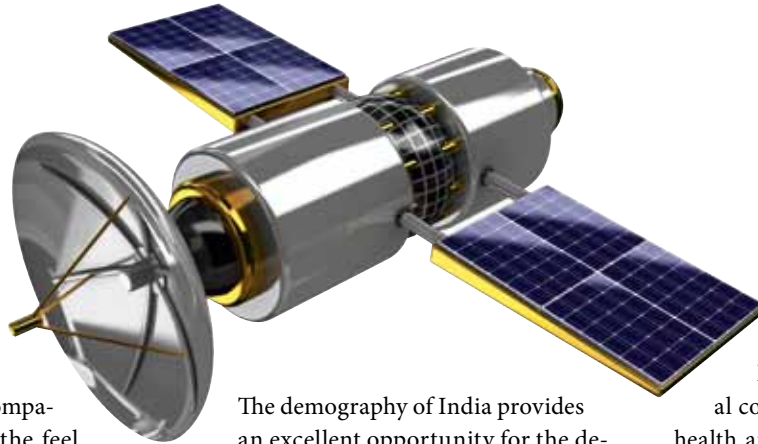
The growth of Telematics in many developing and developed countries broadly divides into four service areas: safety, information, navigation and remote diagnostics. For the past few years the Indian automobile industry has grown by leaps and bounds. This sector is one of the vibrant industries and it accounts for a large percentage of the country's

manufacturing capacity. Rapid economic growth, aided by favorable government's policies, is likely to drive volumes and many foreign players are also playing a major role in developing the country's automobile market.

Globally the industry is integrating more and more telematics in order to monitor performance and detect any flaws in its vehicles and simultaneously meet the demands of users for wireless connectivity. According to iSupply, the BRIC region has the fastest growing auto industry, when compared to other western countries. The percentage of vehicles embedded with Telematics technology is expected to reach 46% globally by the end of 2018. Yet, development of Telematics is still at a nascent stage in the BRIC economies.

India is a vast country with huge growth potential and sales of vehicles are rising. The deployment of OEM embedded telematics is on the rise and the country is also on its way to have its own satellite based positioning system. The Indian Regional Navigation Satellite System (IRNSS) is being developed by the Indian Space Research Organization (ISRO).





More and more transportation companies are getting the feel of Telematics and have started realizing that it is not just about monitoring, but also about achieving transparency in business processes and efficiency. As far as fleet management is concerned, Telematics plays an important role as drivers and vehicles can be tracked throughout the journey.

Vehicular tracking and fleet management has captured a large portion of the total Telematics market. Commercial markets such as fleet management and passenger vehicle segment drive the demand and transportation companies also use Telematics devices in order to give real time updates about vehicle safety and other relevant information. Automotive Telematics can process large amounts of data in real time and information can be gathered at any time when the vehicle is moving. Applications can help decrease the number of road accidents and damage to vehicles. Deployment of similar products will lead the automotive sector to increase digitization in vehicles.

According to a recent report the market for Telematics in India is expected to exceed \$150 million over the next few years. According to Research and Markets the m2m market in India is set to grow at a CAGR of 33.81% by 2016.

The demography of India provides an excellent opportunity for the deployment of the Telematics solutions that improve safety and efficiency. On one side urban areas pose the problem of traffic congestion and high commute times: on the other the rural areas pose the issues of lack of proper roads and infrastructure. Live traffic updates, smart routing and tracking or roadside assistance in case of breakdowns can make life a lot easier for urban commuters. With the inter city road network improving by the day in India, there is also an equal rise in the number of accidents happening on the highways due to higher driving speeds. E-Call and live crash notifications can help in saving many lives that are otherwise lost if not attended within the “Golden Hour”.

Road traffic safety is a global concern, not only for public health and injury prevention, but also as a way to improve efficiencies in traffic management. A lot is being done in the area of Intelligent Transport Systems and the Government is taking many initiatives. More emphasis is being seen on optimizing driving performance by eliminating unsafe technology-related distractions while driving; for example, eliminating the usage of mobile phones. Usage of wide-angle cameras in public transportation vehicles is being mandated to monitor passenger safety, especially after the “Nirbhaya” rape case in Delhi that caused a nation-wide furor. The government is making funds available through the JnNurm project to the State Road Transport Corporations for the nationwide implementation of this solution.
www.mahindra.com



Sirish Batchu is the Head of Infotronics Technology and Advance Electronics at Mahindra Research Valley, Mahindra & Mahindra Ltd. for the Automotive and Farm Sectors. He holds a Bachelor's degree in Computer Engineering from SGSITS, Devi Ahilya University, Indore, and has done his Executive General Management Program (EGMP) from Indian Institute of Management, Bangalore.



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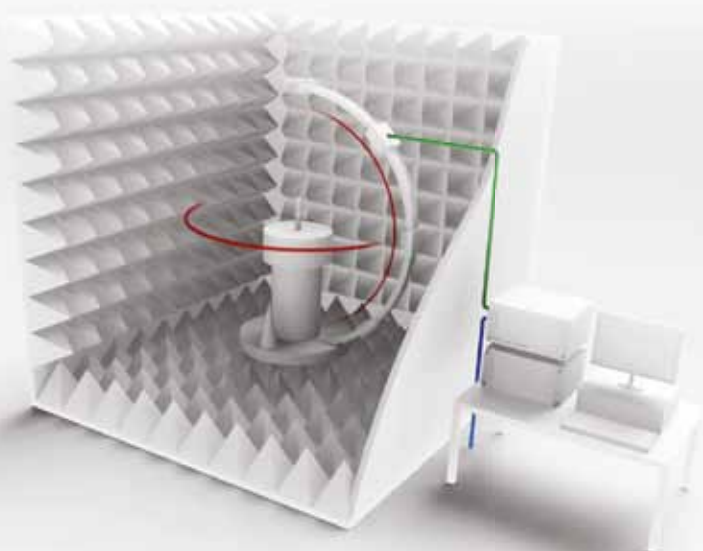
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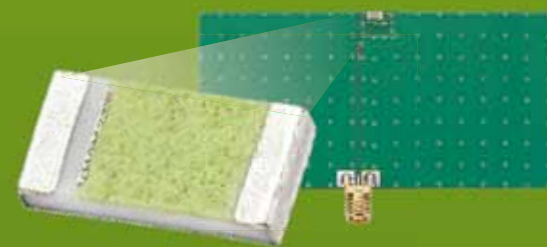
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INTERVIEW

FOCUS AND RESOLVE



Alexander Shatilov was born in the former Soviet

Union and is now a world-class Olympic gymnast in Israel who Telit is proud to sponsor on the ramp to the 2016 Summer Olympic Games in Rio de Janeiro – Brazil. In this short interview we learn about his life and his passion for gymnastics.

Alexander Shatilov, the world's number four floor gymnast and Telit sponsored athlete, talks about life and the journey to Rio 2016



Alexander Shatilov (left) and his coach Sergey Waisburg (right) explain to Telit CEO Oozi Cats (center) the training regimen for Alexander.



telit2market: Tell me a little bit about your family: brothers or sisters and your parents. How have they influenced you?

Alexander Shatilov: My mother, Alla Shatilov, was an acrobatic coach and a former gymnast. She took me to the gym when I was three years old and that started an interest that became a passion. However the minimum age to start training was five, so I had to be patient until I reached that age. My Mom was the one who pushed me. I was captivated by the charm of the sport and since then I have dedicated myself to gymnastics.

t2m: What about the rest of the family?

AS: My Dad, Sergei Shatilov, is a coach and rider in equestrian sports. He was in the former Soviet Union team and took first place in several World Cup contests. Slava Shatilov, my brother, is a soc-

cer coach in Maccabi Herzliya. He started out as a gymnast, and at age 12 decided to change to soccer and went professional. As you can see I come from a sports family that is very athletic and competitive. That motivates me. They are very supportive and encourage me in the good times as well as those that are not so good.

t2m: Tell me a little bit about your journey: how you got to where you are today.

AS: I've always been very competitive, even as a kid; and in my first competitions I won medals: that gave me the motivation to continue to move forward in the sport. I like to set goals and do everything necessary to achieve them and I can tell you that there is no better feeling than standing on the podium and receiving a medal for which I worked so hard. Nothing much has changed since childhood: I still love the feel of a medal being placed around my neck.



t2m: What role does your physique play?

AS: Until the age of 16 I had a short frame, which is very valuable and helpful in gymnastics, but when I got to 16 I grew by 20 cm or more in one year, so now I'm tall. That was a difficult time as I had growing pains. And when it came to the gymnastics, I had to get used to my new size and work on significantly strengthening my body. That was not a particular good time in my sports life and I even considered the possibility of quitting. Today, I'm considered to be one of the tallest gymnasts in the world.

t2m: What influences have encouraged you in your pursuit of gymnastics?

AS: Since I was very young I watched various competitions held around the world. Whether it was the European Championships, the World or the

Olympic Games. At the time I was growing up the Internet had not been developed to the extent it is now so I watched television broadcasts. My parents helped me with that. They recorded videos for me so I had an impressive collection of all the major competitions and at least several times a week I took out a videocassette and watched it over and over, time after time. That way I learned to do different exercises. I admired those gymnasts greatly and they became my role models. I always aspired to reach their levels of achievement.

t2m: What does your typical day look like?

AS: I train six days a week. Four days of two sessions a day, and two days of one session. My morning training goes from 10:00 to 12:30, and my afternoon / early evening session between 15:30 to 19:00. Between trainings I try to get

some rest and regain strength, and at the end of the training I have physical therapy or massage.

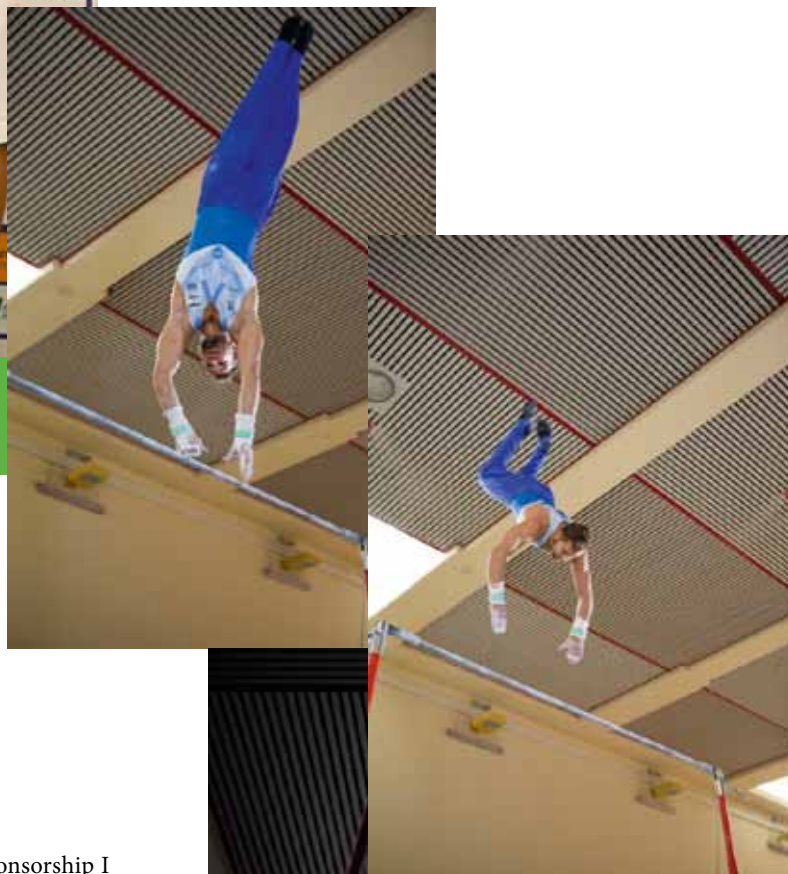
t2m: To date, what is your greatest gymnastic achievement?

AS: I have a number of achievements. Some are more important and significant to me and some a bit less. For me the most significant are the five different European championship medals. The Gold Medal in Moscow and the European Championship title in 2013; a Bronze Medal in Milan (2009); a Silver Medal in Berlin (2011); a Bronze Medal in Montpellier (2012) and a Bronze Medal in Sofia (2014).

In addition I have two bronze medals from World Championships: one in London in 2009, and the other from Tokyo 2011. I also went to Olympic Games finals: London 2012 and Beijing 2008.



Alexander Shatilov (center) receives prize from Israeli Olympic Committee on winning the bronze medal at the European Championships in 2014 in Sofia, Bulgaria. Igal Carmi, president of the Israeli Olympic committee (left); Dr. Uri Schaefer, head of the Israel Sport Authority (right).



t2m: What do you hope to achieve in 2016?

AS: First of all, I want to meet the entry criteria for the Olympic World Championship in Scotland next year which will ensure my participation in the Olympic Games in 2016. I'm looking forward to the Olympics and getting to the finals. Hopefully I will make that in my strongest modality - the floor exercise. Once I do that, the expectation is of course to get a medal and fulfill my dream. Then the sky is the limit.

t2m: When did Telit decide to sponsor you? How did they let you know?

AS: We began talks in early March and in April we started our cooperation. The way I was informed was in a letter from Mr. Oozi Cats, Telit CEO.

t2m: How did this sponsorship affect you personally and professionally?

AS: As a result of Telit sponsorship I can focus exclusively on practicing my routines and not be concerned about things like my financial situation. This really gives me an "economic" peace of mind, which allows me to direct all my thoughts and energy to what is most important for me now – training.

Most of the time I am training, but when I have some free time I like to go to the beach or the equestrian center. I also like to practice in other areas like playing volleyball on the beach with friends, surfing and paddle boarding. Anyway, I'm basically a fan of all types of sports. Give me a ball and a few people and we start playing soccer. Give me a tennis racket and I will play tennis, or alternatively table tennis. And then there is that which I love the most in the world, my girlfriend Alya.

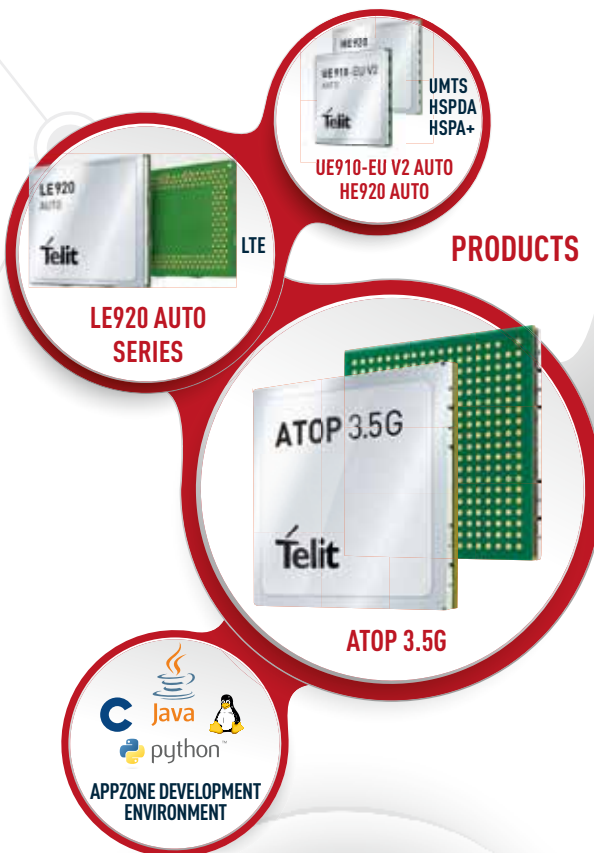
Learn more about Alexander Shatilov and watch the video at www.telit.com/sponsor.



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