Machina Research

Strategy Report

Internet of Things (IoT) Communications Service Provider Benchmarking 2016 [Extract]

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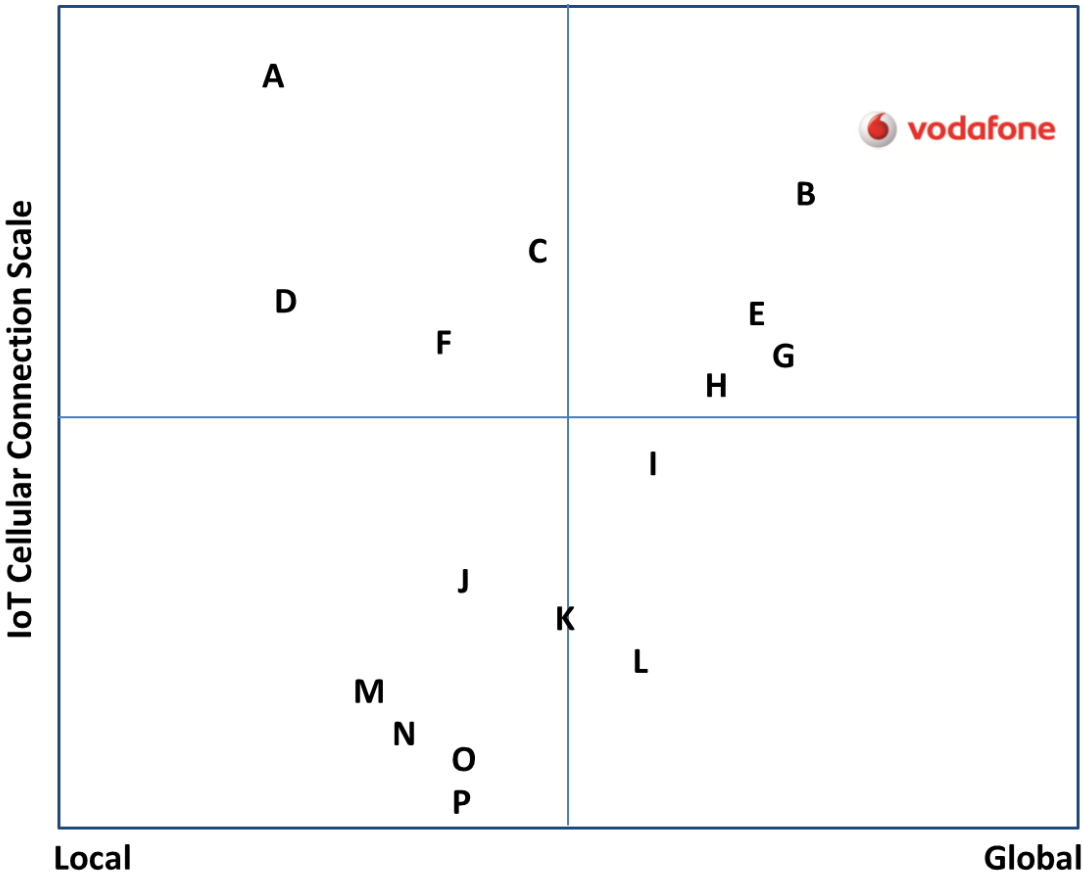
Note: This is an adapted and abridged extract from the Machina Research Report 'Internet of Things (IoT) Communications Service Provider Benchmarking 2016', published in September. This extract was reproduced for Vodafone, featuring the elements of the report that relate to Vodafone. Much of the profiling and analysis, including that relating to other CSPs, in the Executive Summary has been adapted, removed or anonymised.

1 Executive Summary

1.1 And the leader is…

It has now become an annual ritual of sorts to proclaim Vodafone's global leadership in our annual CSPs in IoT study. Vodafone's still unmatched facilities-based geographic reach, scale of IoT business, and overall rate of growth – in percentage and absolute terms the firm's IoT connections expanded faster than all of the large scale globally oriented CSPs in 2015 (this is based on Vodafone's restated figures for which we were also provided historical values) – has made the last twelve months no different in terms of how one would objectively view Vodafone's standing in IoT to be. The influential global CSP with what is today the largest dedicated IoT business unit is again the leader in our annual CSP Benchmarking study.

Figure 1-1: IoT cellular connection scale and global strategy and capabilities [Source: operators, Machina Research estimates, 2016]

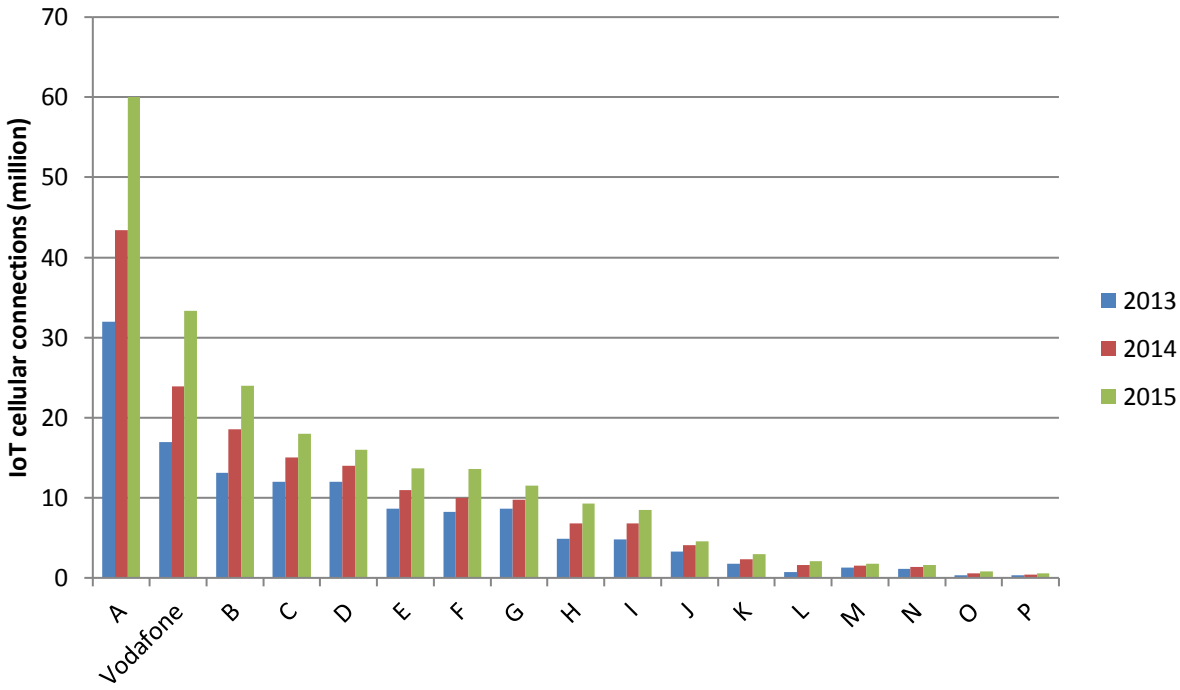


What is important to emphasize is just how hard Vodafone has, and must continue, to work in order to maintain a leading business in IoT. Commitment and investments are certainly table stakes. Funds, made available via Project Spring, naturally provided a meaningful boost to the CSP's IoT efforts. Commitment to the segment is clear and the CSP's success has already seen IoT business unit leaders move on to broader responsibilities within the organization. Strategic investments have been

complemented by a global and solution oriented go-to-market approach that has allowed the CSP to scale the business as well as "move up the value stack." Vodafone also allocates significant resources to actively shape the IoT conversation and increase customer engagements (e.g. IoT Barometer and a growing number of customer events that explore IoT solutions). The global leading CSP invests heavily to be among the thought leaders in IoT.

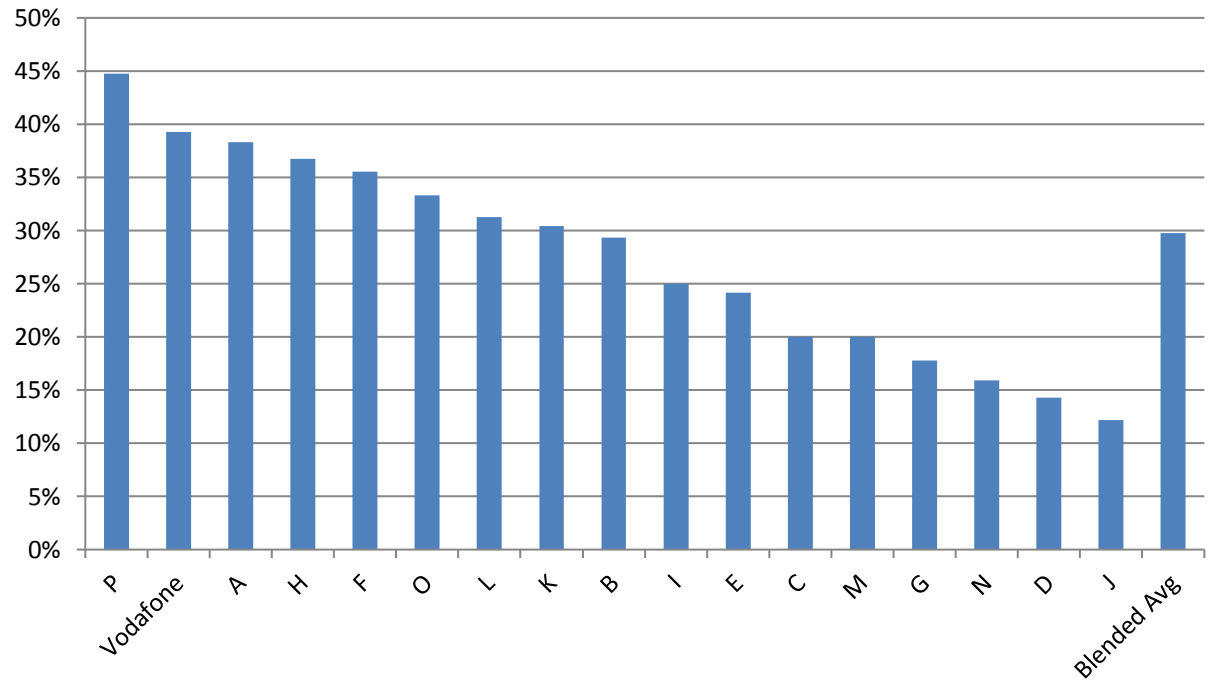
As we have said before, there is no denying that IoT is a business that benefits from scale. In terms of the raw numbers of connections – which is not necessarily the best guide to 'success' – Vodafone ranks highest among CSPs with a global strategy and capabilities. It is second only to an operator that has a decidedly local strategy (Operator A). These statistics are illustrated in Figure 1-2.

Figure 1-2: IoT cellular connections by CSP for selected operators, 2013-15 [Source: operators, Machina Research estimates, 2016]



In terms of growth, as illustrated in Figure 1-3, the weighted average across the 17 CSPs profiled in the report is just under 30%, a little stronger than last year when the average growth rate was 28%. This demonstrates the continuing robust nature of the IoT business whose expansion is well outpacing traditional mobile services (traditional mobile subscription growth for the vast majority of these operators is in single digit percentage terms). What is worth noting is that global leader Vodafone and connection scale winner Operator A ranked second and third as both CSPs saw their IoT connection bases expand by 39% and 38% respectively. Given these two CSPs are the largest in the world when it comes to the connection metric, delivering industry leading growth in percentage growth terms is remarkable. They are benefiting from both the strong market demand for IoT services and the technology infrastructure and go-to-market resources that have arisen from having scaled their IoT businesses. Looking at the entire group of CSPs profiled in this report, all did deliver solid results for their IoT businesses (whether their performance kept pace with or exceeded business plan targets and expectations is obviously another matter).

Figure 1-3: IoT cellular connection growth 2014-15* [Source: operators and Machina Research estimates, 2016]



NB – The full executive summary of the report features further extensive discussion on CSPs' IoT strategies relating to verticalisation, platforms, alliances, low power wide area (LPWA) networks and diverse other topics.

2 Scope

The purpose of this report is to give Machina Research's view on the likely long-term success of Communication Service Providers in the IoT market in terms of generating profit from IoT services. The focus is squarely on the expectation for future, rather than historic, success (although the latter may be an indicator of a predisposition to the former).

There are two main reasons for examining the IoT capabilities of the CSPs. Firstly it can act as a guide to potential customers on which IoT service providers to shortlist. Enterprises looking to implement IoT will frequently be both implementing a complex solution for which they need expert help and making a long-term commitment. They require a high degree of certainty that they are making the right choice of CSP. Secondly, CSPs are constantly on the look-out for best practice in this developing market. Examining the capabilities of competitors is a good way to highlight areas for improvement.

In this year's report Machina Research has revised the global focus of the report. It includes profiles of 17 CSPs: AT&T, China Mobile, China Unicom, Deutsche Telekom, Etisalat, NTT Docomo, Orange, SingTel, Sprint/Softbank, Tele2, Telefónica, Telekom Austria M2M, Telenor, Telia Company, Telstra, Verizon and Vodafone. Coverage of KPN and Swisscom was removed for this year due to still ongoing organizational restructuring or insufficient activity in general. With these companies we cover the biggest global carriers as well as the most prominent regional IoT players.

Machina Research analysed the CSPs on six criteria:

- **Pedigree** – The experience that the CSP has in addressing the IoT market. This will often be vertical-specific. While historical success is no guarantee of what will happen in the future it does demonstrate a level of experience in delivering IoT services, which is frequently a very different proposition from traditional voice and data services.
- **Platforms** – The software platform(s) that the CSP uses for supporting its IoT connections. Platform choices will often have implications for the efficiency with which a CSP can address the IoT opportunity, in particular in the provisioning and connection management process. Machina Research is planning to publish a Strategy Report focusing specifically on the Platforms space, examining the dynamics of this critical element of IoT.
- **Place** – Where the CSP is well placed to provide services. This includes analysis of geographical footprint as well as horizontal partnerships with other CSPs in non-footprint markets. In the latter case, particular focus is given to the ability to provide an end-to-end service. It should be noted that a CSP's ability to generate profit from an IoT connection will be greater if that connection is supported via its own facilities-based footprint rather than through roaming agreements. Also included as a sub-set of this analysis is the availability of broadband (3G and 4G) wireless networks. With regard to network technology choice, the availability (or lack of it) of broadband networks will affect the ability of a CSP to address the needs of particular applications as efficiently as a rival may. It should be noted that there is a well-defined evolution path for most CSPs from 2G to 3G and LTE. Differences related to network deployment will only be highlighted where it differs substantially from the industry norm.
- **Partnerships** – Partnering is critical for the success of IoT. The focus is on vertical partnering (i.e. tying up with other players in the value chain to provide a solution that meets the specific

needs of the target market). Horizontal partnering (i.e. with other CSPs to provide the broadest footprint possible) is largely covered in the 'Place' category.

- **Process** – Examining a variety of processes involved in the supply of IoT services including application development, device certification, troubleshooting, SLAs, project management/systems integration, and client support. All of these enable a CSP to deliver an appealing proposition to potential clients. Furthermore, the more value-add provided by the CSP, for instance in application support or systems integration, the larger its likely share of the revenue accruing from any given IoT connection.
- **People** – Much of the success in IoT will depend on having the right personnel in the right place. This section examines the number of dedicated IoT professionals, the CSP's organisation and the fitness for purpose in addressing the IoT opportunity.

This document is an extract of the full report, which features additional analysis of the overall M2M CSP landscape as well as profiles of seventeen CSPs: AT&T, China Mobile, China Unicom, Deutsche Telekom, Etisalat, NTT Docomo, Orange, SingTel, Sprint/Softbank, Tele2, Telefónica, Telekom Austria M2M, Telenor, Telia Company, Telstra, Verizon and Vodafone. With these companies we cover the biggest global carriers as well as the most prominent regional IoT players. Each CSP is profiled in the same way as Vodafone, below. Further analysis of CSPs can also be found in our IoT Strategies and M2M Strategies Streams, as well as in the various Research Notes that are published.

For more information on the full report visit: https://machinaresearch.com/report/internet-of-things-iot-communications-service-provider-benchmarking-2016/

3 Communications Service Provider Profiles

3.1 Vodafone

Vodafone has been for the past several years the consistent global leader in CSP IoT services. The company long ago made a strong commitment to pursue opportunities in the IoT market and through bold investments in key IoT vertical segments as well as in technology and capabilities, it has built what is now the largest business in IoT among global CSPs. In so doing it has also formed the largest team of IoT specialists and when this team is coupled with its unmatched global footprint, it becomes clear why the company would consistently be on the short-list of multinational corporations seeking seamless global IoT services.

Table 3-1: SWOT for Vodafone in the IoT market [Source: Machina Research, 2016]

Strengths • Scale – Vodafone has the largest global team and has invested a substantial amount in developing its IoT capabilities. • Footprint – Vodafone has the largest facilities-based global footprint and large numbers of "Partner" operators in non-footprint markets. • Strong pedigree in supporting enterprise customers. • IoT team has strategic focus within Vodafone Group Enterprise. • Ready-made framework for superior commercial roaming/ wholesale arrangements with partner operators, which is complemented by the Global M2M Platform licensing arrangement.	**Weaknesses** • Continuing rapid scaling up in IoT capabilities may result in 'growing pains' • Lack of in-house systems integration capability (relies on external partners) • Lack of facilities-based geographical coverage in the US, a key and large scale IoT market (recently launched MVNO in the US should help the IoT business unit however)
Opportunities • Build on scale of operations to offer increasingly competitive and/or feature-rich offering. • Large installed base of enterprise customers represents a cross-sell opportunity. • Optimise a horizontal application development environment. • Extend geographical coverage through Global M2M Platform licensing, and further through using third party operators as routes to market/resellers. • Take more value by having full service offerings, e.g. cabinets, asset tracking, usage-based insurance, and generally automotive via the Cobra acquisition. • Enlarge the addressable market via near-term rollout of NB-IoT.	**Threats** • Increased competition from Ericsson DCP and Cisco/Jasper as network vendors look to proliferate their respective systems, creating pressure on Global M2M Platform license pricing. • Growth of global alliances threatens Vodafone's existing lead in geographical coverage. • Competing LPWA technologies persist despite the fast closing window of opportunity (albeit shortening) vis-à-vis the CSP's planned LTE CAT-NB1 rollout.

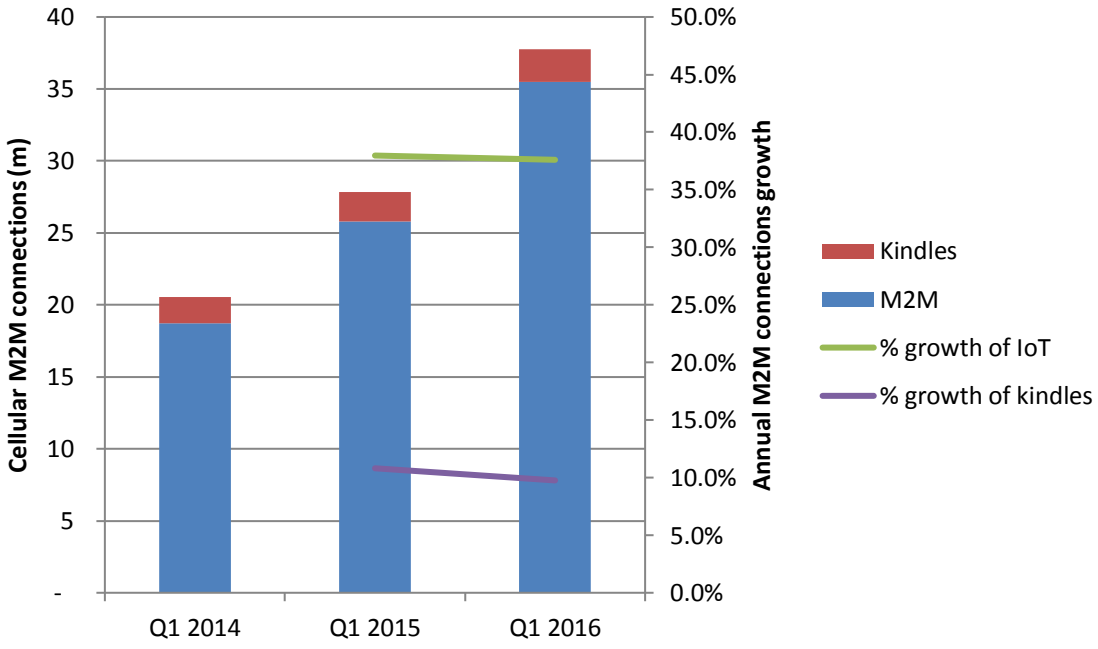
Vodafone's IoT business continues to grow at a robust pace with IoT cellular connections expanding 38% in the last year. This ranks the company, despite its already industry leading global scale, as the fastest growing in percentage terms amongst the globally oriented CSP leaders in IoT. This speaks to the effectiveness of its IoT strategy and the success the company has had in building its brand in the industry – as well as in simply signing an ever growing list of business customers to its IoT services.

One important differentiator for Vodafone is the licensing of the Global M2M platform to non-Vodafone carriers, and an associated opportunity to expand offering to non-footprint territory in conjunction with partner operators. Momentum continues to build around this effort especially as Vodafone has committed significant resources behind it and as, on the potential partner side, the multi-platform strategy has emerged as an important development for CSPs pursuing the IoT opportunity.

3.1.1 Pedigree

Vodafone has re-stated the way it reports M2M connections, now including devices that have been provisioned, and thereby paid for, but may not have necessarily been active during the reporting period. Machina Research has been able to examine company performance the past couple of years based on these revised metrics and, not surprisingly, it does not reveal anything markedly different in terms of the way the company has grown. If nothing else, the revised reporting structure reveals that the IoT business at Vodafone is actually of a scale that is larger than previously thought.

Figure 3-1: Vodafone M2M connections 2014-2016 [Source: Machina Research, 2016]



NB – The split between 'M2M' and Kindles in the chart above is based on Machina Research estimates. The total figure reflects re-stated figures from Vodafone.

As has always been the case, in our analysis of other CSPs (most notably AT&T) we explicitly distinguish between M2M versus eReaders (in the form particularly of Amazon's Kindle). Here we do the same with the revised figures. Based on Machina Research's estimates of the number of Kindles connected by Vodafone, we believe that it had around 35.5 million connections that we would term M2M at the

end of 1Q 2016 (the company reported a total of 38 million IoT cellular connections). As illustrated in Figure 3-1, the revised figures show the consistent growth of the business in the last couple of years. In fact, when compared to other large scale CSPs with global strategies and capabilities in IoT, Vodafone's growth is among the highest.

For the past several years Vodafone has attributed growth to the key themes of big clients, emerging markets, connected products, and consumer-selected M2M (SIM transformation evolved from SOBE). These themes continue to drive the business today and adds to it particularly robust growth from verticals such as healthcare, energy/utilities, and automotive/transport (strengthened by the Cobra acquisition). Vodafone also continues to see uplift in like-for-like data traffic and ARPU. Devices are generating more traffic and thus more revenue as usage grows.

Vodafone continues to see great client wins and while many are not public, contracts and agreements with major corporations such as Philips Lighting, Ryanair and CGI have been noted. The company has also highlighted customer wins in the home security, industrial and utility segments. It has deals with healthcare companies like PHT, Astra Zeneca for cardiovascular patient monitoring, and Diabetacare for connecting diabetes monitoring equipment. In the key automotive vertical, Vodafone received an award from Porsche for excellence as a supplier (a contract to provide M2M services to the auto manufacturer was announced in early 2015) and holds numerous service contracts with global automotive manufacturers. These include the likes of BMW, Volkswagen/Audi, Fiat and Toyota as well as several others yet to be made public. Innovations around its platform have been especially helpful to the CSP building the connected car business. For example, the "Internet in the Car" solution allows it to deliver separate services to the OEM as well as the automobile owner via a single embedded SIM (see Section 3.1.2). Such service flexibility is critical to accelerating the adoption of connected car services.

Other significant wins include ThyssenKrupp and KONE for elevators and in agriculture there was Keenan Systems and Moocall for livestock management. When it comes to the energy sector, an important and growing IoT segment, the CSP has signed contracts with companies such as E.ON, Centrica, NPower and Schneider Electric. Other customers noted by Vodafone include National Monitoring, Prompt Softech, Bitchain, Where Is My Bike (WIMB), International Cleaning Equipment (ICE), Navman Wireless and Microlise.

3.1.2 Platforms

Vodafone launched its Global Data Services Platform (GDSP) in mid-2009, now called the Global M2M Platform. This connectivity management platform provides all the usual SIM provisioning and management functionality. The persisting question with regard to the Global M2M Platform is whether an in-house platform can provide all the required functionality and, particularly, has a strong development roadmap. For any CSP other than Vodafone, it may have been a problem. However Vodafone has the scale to justify continuing investment. Furthermore the fact that it's an in-house developed system means that it is fully under Vodafone's control. This allows for more integration with the platform. It also provides more certainty. Unlike 3rd party platforms it can't be sold to a competitor and Vodafone can allocate development resources exactly where it sees fit, allowing the company to deploy new features more quickly. This is especially valuable when responding to customer RFPs that have very specific feature requirements, especially around network control and security.

Project Spring provided additional funding for IoT. Part of the funding for the accelerated global rollout of the Global M2M Platform come from the sale of Verizon Wireless in September 2013. Vodafone had announced back then that it would reinvest some of the proceeds in a GBP7 billion capex plan called 'Project Spring'. The bulk of the money was earmarked for network coverage and capacity improvements in Europe and the Asia-Pacific region, with a GBP0.5 billion earmarked for the enterprise segment "to expand [Vodafone's] geographic coverage for [its] core enterprise business as well as its M2M solutions (…)."[1]

One major tenet of this is the expansion and licensing of the Global M2M Platform to non-Vodafone CSPs around the world. The intention is to be able to support customers with the Global M2M Platform in every country. Courtesy of the Datora partnership (now rebranded Vodafone Brazil) it has been rolled out in Brazil. Other countries include Canada and Kuwait, plus other players in the Middle East and in Asia. SFR is a big partner in this effort and wins with CSPs like Zain, TDC and others are helping the firm inch towards its aggressive goal. The partners will be charged a low usage based fee. The aim is not to generate revenue from software licenses, but to get as wide a distribution as possible, unlike the commercially licensed platforms such as Ericsson's DCP or Cisco/Jasper's Control Center. Furthermore anyone adopting the Global M2M platform will naturally position themselves well to host localized connections from Vodafone's multinational clients, although Vodafone's hope is certainly that the operator would use the Global M2M Platform for all domestic connections. Machina Research anticipates that this will be an appealing proposition for smaller CSPs, but many are likely to choose to adopt Vodafone's Global M2M Platform as a complement to one of the other platforms if possible. That way they maximize their potential opportunity for incoming connections. As a low usage based fee, we can anticipate it will continue to be well received and thus provide a competitive differentiator for Vodafone. While the CSP does not publicly disclose the number of countries it is now available in, guidance indicates solid momentum. Coverage will see a more than 30% increase in the number of countries by the end of the current fiscal year. The rollout goal of 50 countries before the end of 2018 appears achievable.

As for the development of the platform itself, Vodafone continues to optimize the IoT portal to give customers a best-in-class and easy-to-use platform to manage their IoT deployments. A tremendous amount of work has gone into enhancing the user interface and feature set. It also continues to expand the API catalog, which now has over 400 built, as well as strengthen its business rules engine. This is complemented by the rollout out of LTE which is now available in over 100 countries (including those where it has partnerships/roaming agreements for).

This will be further complemented by what we anticipate will be one of the more substantial global LPWA rollouts to come. Together with Huawei, the CSP announced the opening of the first Open IoT Lab for the LTE Cat-NB1 technology in April 2016 (according to Huawei, this is the first of seven labs it plans to open with partners). The lab provides pre-integration testing and will support application developers as well as device and module manufacturers. While Vodafone's own LTE Cat-NB1 rollout plans remain mostly under wraps, initial commercial deployments will arrive in 2017. Given the vast majority of Vodafone's existing infrastructure is LTE Cat-NB1-ready (via software upgrade), the CSP

[1] http://www.vodafone.com/content/dam/vodafone/investors/financial_results_feeds/half_year_30septembe r2013/dl_halfyear2013.pdf

finds itself in an opportune position to capitalize on what we anticipate will become the most significant wireless wide area networking technology for IoT.

We also expect continued efforts to integrate enhanced vertical capabilities (e.g. Cobra), particularly those that map to Vodafone go-to-market vertical priorities as well as address key growth areas in IoT, such as SIM security services. Vodafone has also worked with companies like Accenture to make available a more standardized data reporting and application enablement platform. Through these data reporting efforts it can extend capabilities into data analytics, offering and exploring potential solutions in areas such as insurance (via UBI data), automotive (crash analysis), and asset management (footfall analytics using beacons in campus environments).

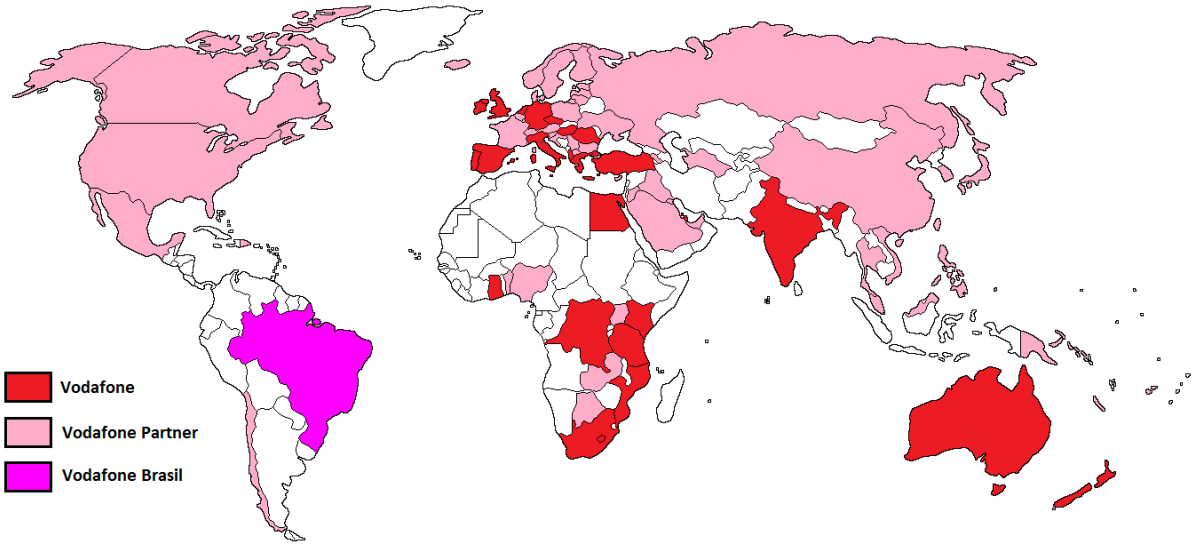
The foundations for its vertical push were laid with the acquisition in November 2012 of Greek fleet management firm Zelitron (Vodafone previously owned 40%). Vodafone also holds a 20% stake in Device Insight, adding a device management element to the proposition. The result is an all-in-one IoT package for the remote monitoring and control of connected devices, combining three key elements: hardware, wireless network connectivity and application software. Vodafone's Remote Monitoring & Control Service (RMCS) is claimed to make it easier for companies to implement and integrate IoT solutions into their business processes. The RMCS 'platform' solution standardizes at least the infrastructure supporting these diverse applications. The aim is to scale and industrialise the application enablement element to provide standardized remote monitoring and control capabilities for any connected device and to provide a tool set to simplify process integration.

3.1.3 Place

Vodafone's global footprint continues to be a major point of strength. Through its own operating companies, it has one of the best European footprints. It is also strong in Africa through 65% owned Vodacom and has subsidiaries in Australia, India and New Zealand. A network of "Partner" operators that it has built over the last ten years enables coverage in the rest of the world. It includes the likes of TDC Denmark, SFR in France, MTS in Russia and China Mobile. Today Vodafone has well over 50 partner operators that are commercially and technically integrated. Adding to the partners program are the over 500 more traditional roaming partners the CSP has in more than 200 countries. This makes the CSP among the most, if not the most, globally oriented among the major service providers pursuing IoT.

Figure 3-2 below shows Vodafone's footprint, together with its partner operators.

Figure 3-2: Vodafone's global footprint [Source: Vodafone, Machina Research 2016]



Meanwhile, in South America, Vodafone established an agreement with Datora Telecom to support the growing number of multinational businesses looking to extend a presence in Brazil. From August 2013, Datora Mobile rebranded to Vodafone Brazil. Datora itself has a dedicated IoT unit and has installed more than 150,000 connections on behalf of corporate customers. The Brazilian IoT market, due to regulatory factors, requires a local on-the-ground presence[2]. Within the Central and Latin American region, Brazil represents the most dynamic IoT market.

As noted above, there continues to be a concerted effort to license Vodafone's Global M2M Platform to CSPs around the world. This allows Vodafone to sell its platform through partner MNO's where Vodafone does not currently operate, extending its reach in those markets beyond large multi-nationals to national corporates and beyond. Machina Research also expects increasingly deep relationships with many of the less-developed CSPs who choose to adopt the Global M2M Platform. Vodafone has the potential to provide these third party CSPs with a portfolio of IoT products, which can significantly enhance the third party operator's offering.

As well as the network coverage, Vodafone also has a very strong pedigree in supporting the large enterprise customers, such as Unilever. It will look to cross-sell IoT services into this existing base. In July 2012 the EU approved Vodafone's acquisition of Cable & Wireless Worldwide (CWW), a deal which was completed in August 2012. The acquisition of CWW has provided support for alternative complementary access technologies, most notably fixed-line, as well as for global solutions through for instance data center and fibre backhaul assets. CWW was very strong in the enterprise market and thus gave Vodafone an additional route to market for IoT services.

3.1.4 Partnerships

Vodafone has done an excellent job building their global partner programme, especially as it pertains to aspects of the value chain in which the company is not naturally strong. Machina Research in

[2] For more details on Vodafone's deal with Datora and the challenges of M2M in Brazil, see Research Note "Research Note - Overcoming the permanent roaming challenge for M2M: Vodafone deal with Datora shows one solution, while AT&T keeps its options open" (September 2013)

particular believes systems integrators such as Accenture and CGI are critical to its strategy. In fact, Vodafone has developed close partnerships with practically every major global systems integrator.

Other important partnerships include those with device manufacturers such as Cinterion (now Gemalto), Novatel and various others including Wireless Logic and Orbcomm. This is in addition to the other strategic relationships mentioned in this profile such as with Zelitron and Device Insights and module manufacturer Netcomm Wireless.

3.1.5 Process

Unlike some of its peers, Vodafone has no dedicated systems integration (SI) arm. However, it has built close relationships with the likes of Accenture, IBM and HP and believes that it has the flexibility to partner with the best-in-breed SI based on the country and sector. Despite this lack of specific SI capability, Vodafone has allocated a large amount of resources to project management, including technical sales people working with clients to design solutions and make recommendations about specification. This includes local support and local touch-points. They are also increasingly focused on their IoT developer programme that went live in 2012. This increasing focus on products and solutions rather than connectivity is illustrated by examples presented in Section 3.1.1 above.

Machina Research had previously flagged the sale of pre-integrated IoT bundles as a differentiator for Vodafone. While many of its competitors have now adopted similar approaches, the benefit to clients of being able to use Vodafone as a one-stop-shop for all of the IoT capabilities with a single global contract with one point of contact remains an important asset. Vodafone has continued to build on this for standardised hardware terminals. One example of this is a win that came by way of a complete, end-to-end, automotive alarm solution provided to a high profile automotive manufacturer. To facilitate its ability to provide integrated hardware capabilities, Vodafone established strong relationships with firms like module/device manufacturer Netcomm Wireless. Standard form factors bring a benefit of scale and a consequent reduction in price. Of course this is not applicable in all environments but certainly in industrial applications standard devices are perfectly serviceable, e.g. aircon, ATM, industrial.

As noted in Section 3.1.1 above, Vodafone has deployed eUICC capability through its SIM transformation project which has evolved from the SOBE offering. In so doing it has built up additional knowledge of how to deal with the customer experience element of localization, as well as other challenges such as billing, pricing, and customer conversion. This experience has been particularly invaluable, for example, in its automotive sector wins in the last two years.

Vodafone has also been working to streamline the application development environment (see Section 3.1.2, above).

3.1.6 People

Vodafone formed a dedicated IoT business unit in 2009. With the addition of Cobra team (now called Vodafone Auto) in late 2014, there are now over 1,300 dedicated IoT and automotive specialist staff supporting the business unit. Amongst global CSPs, Vodafone thus has the largest base of dedicated IoT staff. Vodafone has also allocated a large amount of these resources to vertical based teams and therefore has a lot of industry-specific experts. Typically this has involved hiring vertical experts such

as industrial automation professionals from Siemens and automotive experts from the likes of a Garmin and Denso.

The team also continues to take advantage of local resources, e.g. national enterprise sales teams in its operating companies. Vodafone is also employing more people in non-footprint markets to address the global opportunity, such as China and Korea (see Section 3.1.3, above). With the extended staff, the CSP counts well over 8,000 individuals helping to support the IoT business in one form or another across the globe.

4 About Machina Research

Machina Research is the world's leading provider of market intelligence and strategic insight on the rapidly emerging Internet of Things, Machine-to-Machine (M2M), and Big Data opportunities. We provide market intelligence and strategic insight to help our clients maximise opportunities from these rapidly emerging markets. If your company is a mobile network operator, device vendor, infrastructure vendor, service provider or potential end user in the IoT, M2M, or Big Data space, we can help.

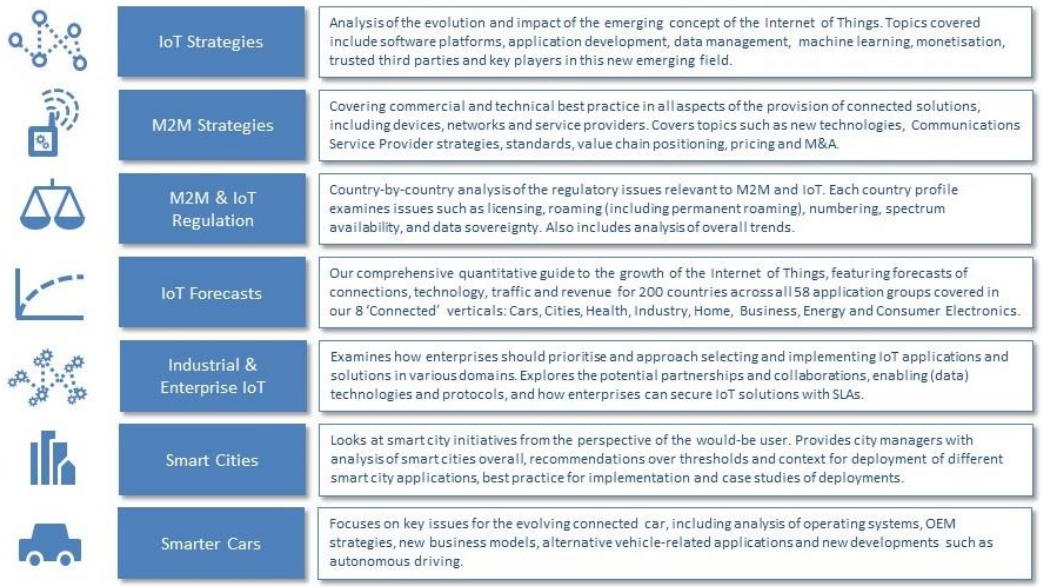
We work in two ways:

- Our **Advisory Service** consists of a set of Research Streams covering all aspects of IoT and M2M. Subscriptions to these multi-client services comprise Reports, Research Notes, Forecasts, Strategy Briefings and Analyst Enquiry.
- Our **Custom Research and Consulting** team is available to meet your specific research requirements. This might include business case analysis, go-to-market strategies, sales support or marketing/white papers.

4.1 The Advisory Service

Machina Research's Advisory Service provides comprehensive support for any organisation interested in the Internet of Things (IoT) or Machine-to-Machine (M2M) market opportunity. The Advisory Service consists of seven Research Streams (as illustrated in the graphic below), each focused on a different aspect of IoT or M2M. They each provide a mixture of quantitative and qualitative research targeted at that specific sector and supported by leading industry analysts.

Advisory Service Research Streams [Source: Machina Research, 2016]



For more detail on each of the Research Streams, please see the 'Machina Research Advisory Service – Guide to Research Streams' document.

4.1.1 Reports and other published content

Our research content consists of a number of broad categories of deliverable:

- **Strategy Reports** – Extensive and in-depth reports focusing on specific key major themes in IoT and M2M.
- **Research Notes** – Shorter reports examining key issues and developments in the world of M2M and IoT.
- **Application Spotlights** – Regularly updated profiles of each M2M application. Each Application Spotlight comprises Definitions, Drivers & Barriers, Market Analysis, Forecast and Conclusions & Recommendations sections.
- **Forecasts** – Many of our Research Streams include extensive market forecasts. These are available through our online Forecast tool.
- **Research Stream-specific content** – Some of the Research Streams have specific content types, for instance the Regulatory Profiles in the IoT & M2M Regulation Research Stream.
- **Previous publications** – Clients enjoy full access to our library of past publications from the Research Stream.

Each of the Research Streams includes a varying blend of the above. For details of the specific contents of each of the Research Streams, please refer to the 'Machina Research Advisory Service – Guide to Research Streams' document.

4.1.2 Strategy Briefings

An opportunity for direct face-to-face interaction between the client and the Machina Research analysts. Typically a Strategy Briefing will involve a presentation at the client's premises on a theme agreed with the client within (or closely related to) the scope of existing research.

There are no Strategy Briefings bundled as standard with any of our Research Streams. These need to be included as separate items in the subscription.

Relevant travel costs will apply.

4.1.3 Analyst Enquiry

All clients also get direct access to our analysts in the form of enquiries about the published materials and topics with the Research Streams to which you subscribe.

You may want to request clarification on something within the report, ask for a brief update or pick our brains on any issue.

We provide clients with unlimited access to our analysts, up to a maximum of one hour per enquiry. We are happy to undertake more substantial enquiries as custom research.

4.2 Custom Research & Consulting

Machina Research's analysts have a wealth of experience in client-specific consultancy and custom research. Typical work for clients may involve custom market sizing, competitor benchmarking, advice on market entry strategy, sales support, marketing/promotional activity, white papers or due diligence. Subscription clients are eligible to purchase our custom research and consulting services at discounted daily rates.

For more information on Machina Research, visit our website at http://machinaresearch.com.