The Internet of Things – assessing the M2M opportunity in Brazil
Foreword

The Brazilian mobile sector has rapidly developed over the last three years – active handsets grew from 203 million in 2010 to 271 million in 2013. Mobile networks now cover more than 100% of the 5,500+ municipalities across the country. Market maturity is supported by the successful implementation of 4G technology, which was launched aggressively in April 2013 and reached 1.3 million users by December of the same year. Current 4G network coverage is available to 32% of the Brazilian population in 81 cities.

Although these compelling figures highlight a successful history, the rapid transformation in the telecoms sector worldwide is also a challenging reality in Brazil. Major international and local operators compete to deliver required and desired innovative services for an increasingly sophisticated customer base. This innovation has brought forms of machine-to-machine (M2M) services to the fore. Still, while M2M is not a new concept for operators, their role has traditionally been limited to connectivity.

Opportunities around M2M (in verticals such as finance, retail, automotive and transportation, utilities, security and safety, health) are increasingly factoring into telecoms operator strategies to further monetize their data networks and generate top-line revenue growth.

Moving beyond connectivity is not a matter of choice

This is the context in which the operators’ M2M business is being developed. Operators are aware of the potential that the opportunity represents, and are putting thought, effort and resources into designing and establishing comprehensive business models to deliver on the opportunity and increase value generation, whether through providing pure connectivity or added value to end-users.

The change is irreversible!

Operators should be aware that this new opportunity includes partnering, revising price structures, realigning the organization and, most importantly, developing a working business model with a clear value proposition for the end-user. This is a major challenge in the Brazilian market as operators play in a rapidly evolving and complex ecosystem, where they both partner and compete with players from different industries and sectors.

In addition, regulatory changes focusing on promoting the M2M business have brought additional complexity to how operators and other players can best capitalize on this opportunity.

All of this is not unexpected. The M2M business in Brazil is being framed, and both suppliers and consumers are still in the process of understanding how to sustainably benefit from it. This is healthy, and regardless of the future configuration of the industry, our findings in this study show that the telecoms sector is poised to be actively and significantly involved in the M2M space.

Luis Monti, Partner, EY Brazil
Introduction

Forms of M2M have been around for years but have primarily been a wholesale connectivity play for operators – connectivity currently accounts for roughly 90% of operator M2M revenues. While connectivity revenues have a healthy growth profile, a wave of new forms of M2M are emerging in our increasingly connected world, generating a spectrum of new services. This presents operators with opportunities to target new revenue streams, giving them a path to build upon their core connectivity competency and bridge the growing gap between data revenue and usage.

Still, M2M is not easily defined. Rather, M2M is an array of markets revolving around vertical industries and specific applications. As such, operators are confronted with a variety of challenges and constraints as they navigate the unique market conditions and complex ecosystems inherent in M2M opportunities. As a result, tapping into opportunities beyond connectivity is not a straightforward proposition – operators are faced with execution risk and uncertainty about revenue and profitability.

In this paper, we identify operator opportunities in M2M, identify key challenges and constraints in the M2M market, and review operator tactics and market factors that are driving M2M successes.

In addition, we take a view of the Brazilian M2M market, outlining drivers, constraints and current market conditions, considering perspectives from top Brazilian operators surveyed by EY.
M2M is an opportunity that operators in Brazil cannot ignore. Operators should begin planning and investing effectively to ensure that they are well-positioned for rapid growth in M2M services. This preparation includes partnering, revising price structures, realigning the organization and, most importantly, developing a working business model. Mobility is rapidly becoming the primary concern of businesses globally, and M2M offers operators a chance to build a value proposition around existing enterprise services and M2M connectivity. Even though the market is nascent in Brazil, a case for optimism remains. Brazilian regulators are supportive of major verticals, and Brazil’s operators can follow the example of global leaders to create their M2M strategy. We believe that M2M, coupled with enterprise services, will create greater loyalty and revenue opportunity for Brazil’s operators.

In the broadest sense, M2M refers to the connecting of remote sensing, monitoring and actuating devices. M2M encompasses a range of elements, including network connectivity, hardware components and devices, applications and platforms, integration, service provisioning and management.

Predictions about the market potential are bullish. Machina Research takes a wide-ranging “Internet of Things” view in its M2M market definition and includes wireline, cellular and satellite connectivity, as well as other connections over unlicensed spectrum.1 Machina forecasts worldwide M2M connections to increase from 2 billion in 2013 to 18 billion in 2022, an annual growth rate of 22%. To put this in perspective, Machina estimates that by 2022, 61% of connected devices will fall under the M2M umbrella, up from the 23% of today, and that M2M will account for 22% of all cellular connections by 2022, up from 2% in 2013.2

Analysts agree that connectivity, which dominates revenues today, will comprise only 9% of future revenues, whereas the integration service layer, and other value-added services, is the largest opportunity. These other services include application development and managed connectivity.

6. Ibid.
M2M offerings have largely been organized around vertical industries. The largest sectors by M2M connections (transport, manufacturing and energy and utilities) will continue to comprise the bulk of connections in the next five years, but they will cede some share to fast-growing areas such as health care, finance and insurance, retail and the government sector.

The M2M market in Brazil is quite nascent: by 1H13, there were only 7.5 million M2M connections. By comparison, AT&T alone had 14.1 million by that time. Still, there is cause for optimism, including recent regulatory developments that will ease operator burdens to expanding their M2M business. The market has also attracted interest from foreign players. Vodafone is in partnership with Brazilian MVNO Datora to provide M2M services in Brazil targeted at serving multinationals operating in the country. The partnership, named Vodafone Brasil, aims to have 15% of the local M2M market in the near future. INRIX, a US-based provider of traffic information solutions, is boosting its efforts to find partners in Brazil in the telematics space.7

Since telecoms regulator Anatel starting collecting data on M2M connections, a geographic disparity has come to light in the development of M2M. The more economically developed South and Southeast regions comprise 85% of all M2M connections, led by the state of São Paulo, with more than 4.1 million connections. Within the state of São Paulo, the city of Campinas alone has 1 million connections – not surprising, as the city is a high-tech center.

But Anatel’s M2M data also reveal that there is solid potential for M2M to spread nationwide. Out of the 67 area codes in Brazil, 20 did not have more than a single M2M connection as of June 2012. By May 2013, there were only six, suggesting that M2M is gaining traction, albeit slowly, in most regions and subregions of the country.

Figure 1. M2M connections and GDP by region in Brazil

<table>
<thead>
<tr>
<th>Region</th>
<th>% of total M2M connections (May 2013)</th>
<th>GDP in R$ billion (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast</td>
<td>67%</td>
<td>2,296</td>
</tr>
<tr>
<td>South</td>
<td>17%</td>
<td>672</td>
</tr>
<tr>
<td>Northeast</td>
<td>8%</td>
<td>555</td>
</tr>
<tr>
<td>Midwest</td>
<td>6%</td>
<td>396</td>
</tr>
<tr>
<td>North</td>
<td>2%</td>
<td>224</td>
</tr>
</tbody>
</table>


“Datora Mobile becomes Vodafone Brasil, aiming at 15% of Brazil’s M2M sector,” Business News Americas, 26 September 2013, via Factiva.
Analysys Mason sees significant M2M demand in the area of security, including vehicle tracking, personal tracking and residential and commercial alarms.\(^8\) In industry sectors that are important to Brazil’s economy, such as mining, companies are looking for M2M solutions that can help them increase efficiency, including remote monitoring of heavy equipment. Our survey of Brazil’s largest operators highlighted finance, automotive\(^9\) and utilities as being the key connectivity-related verticals in Brazil. Interestingly, operators highlighted agriculture as a key target segment with huge potential in Brazil. M2M verticals should have an element of national idiosyncrasy to ensure investments are matched with domestic market trends and priorities. Fleet management and connected security alarms are common applications. Utilities are an area gaining interest – approximately 5,000 of the largest electricity consumers are using smart metering.

**Figure 2.** On a scale in which 1 represents the highest relative significance index, which are the verticals of choice for operators from a connectivity point of view?

<table>
<thead>
<tr>
<th>Vertical</th>
<th>Operator 1</th>
<th>Operator 2</th>
<th>Operator 3</th>
<th>Operator 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance and retail</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Automotive and telematics(^*)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Utilities</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Surveillance and safety</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Health</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: primarily car-tracking business

The rationale for M2M in the enterprise segment is much clearer than in the residential arena. In addition to efficiency and cost reduction, businesses see opportunities to leverage data gleaned from their various M2M connections for intelligence that can drive real strategic value. Convincing segments of the value of M2M remains a challenge. Participants highlighted that the demand for services remains a concern.

**Figure 3.** How strong is the demand for new types of connectivity?

<table>
<thead>
<tr>
<th>Demand Level</th>
<th>Operator 1</th>
<th>Operator 2</th>
<th>Operator 3</th>
<th>Operator 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
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</tbody>
</table>

The graphic highlights that Brazilian operators believe that demand is on the low side, possibly due to limited information around M2M and its advantages or ineffective communication of the proposition. As with most new wholesale services, operators must articulate the value proposition for the overall market as well as for their own customers. Government regulations, usually an impediment to telecoms services, can often support the rollout and understanding of M2M. In Brazil, operators should seek to partner with the Government on the vehicle-tracking initiatives to build the value proposition for M2M in telematics. Facilitating government backing for other M2M verticals, as in the UK with smart metering, could be a defining strategy for operators.

\(^8\) Nuno Afonso, “M2M services in Brazil are set to expand as supportive regulatory activity gains momentum,” Analysys Mason, 15 October 2013.

\(^9\) Mainly vehicle tracking in line with the regulatory agenda.
Amid the positive projections and given the nascent and diverse nature of M2M, the economics and operational aspects of M2M are still largely uncharted. Several significant challenges could hinder the growth prospects. In our survey, Brazilian operators indicated a general uncertainty around business models, citing several complicating issues, including regulatory burden, value chain complexity and device costs.

Figure 4. On a scale in which 1 represents the highest relative significance index, which factors are most likely to inhibit the connectivity business in Brazil?

<table>
<thead>
<tr>
<th></th>
<th>Operator 1</th>
<th>Operator 2</th>
<th>Operator 3</th>
<th>Operator 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>User safety and privacy</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexity in the development/ consolidation of value chain</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to monetize</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Attitudes about realizing revenue reflect this uncertainty – three out of four major Brazilian operators we surveyed expect modest domestic M2M revenues, generating less than 3% of overall service revenue by 2020.

Figure 5. In 2020, what is the estimated impact of revenue from new connectivity services on the company’s total revenue in Brazil?

<table>
<thead>
<tr>
<th></th>
<th>Operator 1</th>
<th>Operator 2</th>
<th>Operator 3</th>
<th>Operator 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 3% and 5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 5% and 8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 8% and 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Monetizing these services remains a major conundrum for operators. Along with the uncertainty of how to offer the services, operators are concerned about how to build more value than simply providing connectivity. Verizon offers a unique perspective on how to support M2M with a range of enterprise services, driving greater value and revenue into the relationship with customers. Developed mostly through acquisition,10 the Verizon telematics service is supported by a Hughes M2M platform that runs in a Terremark cloud. This can be delivered internationally from Terremark data centers running around the globe. This allows Verizon to build a stronger value proposition than simply connectivity. Verizon was delivering ARPs of US$0.50 per month in its connectivity-only deal with OnStar, compared with potentially more than US$20 per month in its deal with Mercedes to provide connectivity, platform, cloud and data center support. Even in the case of a usage-based insurance offering of capture and analytics, ARPs are predicted to be more than US$8 per month. In each case, greater monetization is possible when additional services are bundled with the connectivity.

Below, we explore key considerations that operators need to resolve before investing in and sourcing M2M opportunities, market factors that can reduce roadblocks, and operator tactics in play to drive success. As with many new services in the telecommunications sector, the challenges start with the overall business model and branch out to newer areas of partnership, cost management and reporting.

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10. Hughes and Terremark were both acquired by Verizon.
Moving beyond connectivity: new business models

Operators are particularly good at selling what they already know: connectivity. There are cases where a connectivity model provides a steady revenue stream and upside from growing device connections. A good example is a low-bandwidth, 2G-networked remote monitoring service that can generate a US$10-per-SIM ARPU over a long contract and with a low cost to operate. Despite an upside from device growth, the incremental revenue opportunity is fairly small. Moreover, the connectivity model is exposed to commoditization of the network and competitive pressure, given multiple networks in the market. Operators must think about providing greater levels of end-client value. Developing a sustainable, high-margin business model requires operators to step into other areas of the value chain to drive profitability.

At present, Brazil’s operators do not have a common and clear view on monetization. The nascent nature of the opportunity and the relative uncertainty in the business model mean that the value chain is still being shaped. However, it is clear that partnerships and collaboration are at the forefront of thinking as operators seek to build “win-win” ecosystems.

Cost to serve

Most M2M services need an initial investment. The deployment of hardware at the customer end for energy meter reading, vehicle telematics or remote health services requires an up-front infrastructure cost. The operator often bears this initially and then passes it on to the end customer. In a number of M2M service offerings, this cost has proven a major constraint, especially in emerging markets. Couple this overhead with, at present, low ARPs for M2M SIM cards, and operators will struggle to make a compelling business case for M2M services.

Some of these issues have been relieved when governments have stepped in to provide funding. For example, the British Government allocated US$16 billion toward the installation of more than 50 million smart meters across the UK to cover 30 million households. Telefónica’s UK subsidiary won a contract worth more than US$3.2 billion to be the major supplier for the project.

Identifying opportunities

No one business model applies to all M2M opportunities. Before a coherent strategy can be defined, operators need to gauge each opportunity in terms of market demand, the unique nature of the ecosystem, profitability profile and cost to serve. Further considerations are specific to the vertical industry and data characteristics: type (small/big) and data intensity (intermittent or real time). These factors determine which networks to use (2G, 3G, 4G). The spectrum of services an operator provides may also depend on the data type and application, ranging from connectivity to a robust end-to-end solution. For example, a low/intermittent data M2M case may not warrant more than a managed connectivity solution, whereas a service with real-time interactivity that generates a large amount of data makes a good case for a data analytics solution.
Organizational alignment

Given today’s prevalent wholesale orientation, many telecoms operators’ M2M operations report into a wholesale division. This not only perpetuates the bit-pipe model but can result in a fragmented strategy and an inconsistent marketing message. Moreover, a narrow focus limits opportunities to leverage competencies that can apply across verticals and generate horizontal opportunities.

Shifting M2M alignment within the mobility or enterprise organization is preferable to a wholesale alignment. M2M must be considered a solution to enable both consumer and enterprise segments. While consumer offerings, such as smart home services, will require M2M for delivery, the ability to link M2M to existing enterprise contracts for connectivity offers telecoms operators a real ability to generate loyalty and monetize demand for new service offerings. Mobility is a key trend within enterprise, and therefore, M2M must be harnessed by any operator keen on succeeding in the business segment.

There are important considerations, however. In particular, operators need to be mindful of the wireline component inherent to many M2M services, either backhaul or last-mile connectivity, and they may need to link with the wholesale business for delivery. M2M should force operators to rethink organizational silos and develop a product set that is complementary to existing services across a range of customer segments.

Different organizational models are emerging. Telefónica created its Telefónica Digital organization, under which its M2M organization falls, and which includes a centralized M2M sales resource. Given its broad geographic footprint, the company is better served by this model. Further, centralization can be seen as enabling the company’s strategy to control the development chain while working closely with partners to develop new features and functionalities.
AT&T’s M2M activities are split between its Emerging Devices Organization (EDO) and Advanced Enterprise Mobility Solutions group (AEMS). EDO identifies new devices for consumers and enterprises, while AEMS works on enterprise platform and service components. AT&T also has a Digital Life Services team that identifies and champions new embedded devices within targeted industries.

**Partnerships and investments**

The M2M value chain is fragmented and complex. Again, this is not unique to new services in telecommunications. Increasingly, M2M offerings require collaboration from third parties to be delivered effectively. This is a far cry from voice services, where operators controlled the end-to-end delivery. Operators will not only be working with third parties to provide competencies they do not have, but also with competitors to ensure that M2M solutions have a more global reach.

In an example of partnership models, Deutsche Telekom (DT) has more than 600 companies across 56 countries participating in its partner program. Partners are primarily categorized into hardware, software, system integrators and end-to-end solutions providers. Moreover, DT has three levels of partnership, depending on the type of collaboration, These are:

1. Registered partners – they are registered only on the DT partner portal and can submit solutions on the “solution finder” section.
2. Product partners – they are registered members of the partner profile and can sell products in DT’s “M2M Marketplace.”
3. Project partners – they are approved and officially authorized partners as part of the DT’s “Cooperation Non-Disclosure Agreement.” These partners can participate in DT’s M2M projects.

Brazil’s operators are still considering their investments in priority verticals. Automotive and utilities are being heavily considered, but strategy is still somewhat indistinct.

**Cross-border solutions**

M2M solutions have typically tended to be domestic or even regionally focused. Deploying an international solution proves challenging both from a partnership perspective, as highlighted above, and also from a cost perspective, where roaming contracts can bloat traffic costs. Given solid in-market network coverage, network quality and overall market presence, operators with a wider, multi-country footprint are better positioned to serve multinationals, leveraging existing roaming relationships with operator partners.

Cross-border, cross-vendor alliances have emerged in several regions across the globe, furthering development of M2M ecosystems and opportunities.

- The Global M2M Association (GMA) is a cooperation agreement between TeliaSonera, Orange, Deutsche Telekom and Telecom Italia signed in July 2011. In 2013, the association was extended to Asia and North America through SoftBank Mobile and Bell Mobility, respectively. More recently, TIM Brasil joined the GMA. The association aims to deliver best-in-class, enhanced and seamless M2M services globally through better quality of service, M2M roaming services and interoperability agreements. In Europe, the GMA certification process supports M2M customers in their international deployments by coordinating the whole process of testing and certifying an M2M module at an European level.
• The M2M World Alliance includes Etisalat, KPN, NTT DOCOMO, Rogers, SingTel, Telefónica, Telstra and VimpelCom. In December 2013, the alliance unveiled a multi-operator global solution aimed at simplifying and promoting the adoption of M2M worldwide. The alliance offers a single SIM that works on all member networks, with centralized management and single web platform for monitoring.

Both the Global M2M Association and the M2M World Alliance have covered Latin America in their footprint due to the presence of Telecom Italia and Telefónica in this region. However, a pan-Latin American M2M collaboration has yet to emerge.

Reporting and performance

Managing and appraising performance of new services in telecoms has become a major issue for operators. M2M is no different. With analysts and the investment community keenly focused on financial metrics, operators may find a case difficult to prove with take-up at nascent levels. In this initial period, perhaps metrics focused on take-up and frequency of usage may make more sense. Also, with operators considering network investment costs to be “sunk,” M2M gross margins can reach upward of 60%. However, this may be an illusion when operators begin allocating the costs of network maintenance and outsourcing directly to these services.

Regulation in Brazil

Taxation has historically been a significant barrier to the development of M2M in Brazil, though recent legislation will go a long way to alleviate this. In September 2013, the Minister of Communications, Paulo Bernardo Silva, announced plans to reduce M2M SIM card tax (Fistel) by about 80%. The law sets the activation tax per M2M SIM at BRL5.68 (US$2.61) and the annual subscription tax at BRL1.87 (US$0.86).

Vehicle tracking is expected to be one of the largest M2M areas in the next three years, driven in part by Brazil’s Contran 245 mandate intent on curtailing rampant vehicle theft. By the start of 2014, 20% of all new cars, vans, trucks and utility vehicles produced for the Brazilian market must be equipped with the Contran 245-specified location tracking device; by 30 August 2014, that number jumps to 50%, and total implementation is expected by the end of the year.

In August 2012, the Brazilian Electricity Regulatory Agency (ANEEL) approved a resolution that regulates the basic requirements for smart meters. The resolution gives energy distributors 18 months to start offering smart meters to consumers, though installation is required only when the customer requests it.

Brazil’s operators see a role for the regulator in supporting M2M and new business. Three of four operators highlighted regulatory fees as an issue that may inhibit M2M growth. Regulators should consider the wider ecosystem benefits of supporting M2M.

Anatel has already recognized the power of regulatory incentive, seeking to cut the fees related to M2M and boost the market. Regulators elsewhere have not shied away from incentives and investment in order to drive rollout and take-up. For example, governments in Singapore and Australia have invested heavily in next generation network rollouts to improve social benefits from telephony.

M2M strategy is multifaceted. Operators must seek to complement their investment in chosen verticals with operational tactics involving global partnerships, alignment with existing business services, and innovative developments in platforms and integration. M2M is still nascent, and while business models and pricing remain uncertain, it is clear that operators finally have an opportunity to move up the value stack through their enterprise mobility offering. We believe that operators need greater support in their organizational change and structuring, developing workable risk-assessed partnerships and building out a domestic and international go-to-market strategy. These aspects are critical to creating success in the rapidly growing M2M and business mobility segment.
Appendix — case studies

1. M2M in transportation and logistics – Vodafone
2. Smart meter deployment in the UK – a government initiative
3. M2M usability in agriculture – Telstra and Observant case study
1. M2M in transportation and logistics – Vodafone

Vodafone’s M2M offerings in the transportation and logistics vertical overcome some of the underlying challenges. For example, international shipping containers face delays, diversion, theft, physical damage, piracy and loss of visibility. Vodafone’s M2M asset tracking solutions help to provide details about the location and condition of containers, pallet or the actual goods in transit. Efficiencies and visibility increase through automatic alerts and help in minimizing wastage. On the other hand, high fleet costs, fuel price volatility, increasing fleet safety, accident rates and going green are some of the key concerns in the transportation segment. Vodafone’s fleet management solutions address these challenges.1

Vodafone offers an end-to-end M2M solution to customers that integrates services from multiple suppliers (e.g., M2M modules and applications). Vodafone has 23 partners that cater to the transportation and logistics vertical, ranging from hardware, software, system integrator to communication service providers.

As part of its core offerings, it offers fully managed connectivity, global SIMs and tariffs, and an M2M platform. Further, Vodafone offers extensive SLAs (e.g., network availability, SIM logistics, ancillary service delivery) to its end customers.

Benefits of M2M in the transport and logistics vertical

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost reduction</td>
<td>56%</td>
</tr>
<tr>
<td>Customer service</td>
<td>53%</td>
</tr>
<tr>
<td>Business agility</td>
<td>45%</td>
</tr>
<tr>
<td>Process and productivity improvements</td>
<td>44%</td>
</tr>
<tr>
<td>Consistency of delivery across markets</td>
<td>34%</td>
</tr>
</tbody>
</table>

Source: Vodafone M2M Adoption Barometer – Transport and Logistics

2. Smart meter deployment in the UK – a government initiative

The UK Government is driving smart meter deployments in the UK as part of its energy efficiency agenda to empower consumers to better manage their energy usage, help them save money through accurate billing (a major concern until now) and securing sustainable energy supply. The program aims to roll out 53 million smart electricity and gas meters in Great Britain by the end of 2019. Over the next 20 years, the smart meter installation is expected to provide net benefits of US$11.1 billion to the UK.

Smart DCC is obligated to manage the smart metering service on behalf of its users and will contract with, and manage, the data and communications service providers. The responsibility for planning and delivering the installation of smart meters rests with the energy suppliers. They have the liberty to plan deployment in any way that suits their business model and customer needs.

### Smart meter program delivery in three phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First phase 2010-11</strong></td>
<td>• Involved policy design that was managed by the energy regulator Ofgem on behalf of the Department of Energy &amp; Climate Change (DECC)⁴</td>
</tr>
</tbody>
</table>
| **Foundation phase**       | • Involved working with various stakeholders, such as the energy industry and consumer groups, to complete all the necessary groundwork before mass rollout  
|                            | • Helped stakeholders build and test systems and learn best practices  
|                            | • Established the Data and Communications Company (license granted to Smart DCC in September 2013)⁵ |
| **Mass rollout phase**     | • Expected to begin in late 2015 and to be completed by the end of 2020 |

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3. M2M usability in agriculture – Telstra and Observant case study

Gilgai Farms, a producer of grass-fed beef and mutton in Australia, wanted to manage and monitor water resources on its 2,700 hectare farm that has 44km of pipeline linking 100 watering points. The exercise was taking up to two hours daily. Gilgai selected Observant, an Australian company that develops products and services for water monitoring and management applications, as a service and technology partner.

Observant implemented a technology solution combining its cloud-based Observant Global service and Telstra’s Wireless M2M Control Centre. The Telstra wireless M2M control center provides on-demand and online access to the information needed to operate a wireless M2M (telemetry) business. Observant installed monitoring units to capture water usage and remote cameras to capture images of stock movement. The information is transferred to Observant's global management application through Telstra’s wireless M2M control center, accessible to the customer through a web browser on a tablet, smartphone or PC. Alerts are also shared with the customer through SMS and email when water levels fall below set levels. In addition, Telstra’s control center enables Observant to remotely order, provision and activate services, oversee operation of the SIM and undertake diagnosis.

Gilgai incurred a total investment of US$19,000. The farm was able to save 14 hours a week on daily 30 km water runs. Moreover, early detection of water leakage and damage was possible, and the data collected was actively used in business planning.

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<table>
<thead>
<tr>
<th>Type of contract and license awardee</th>
<th>Details</th>
</tr>
</thead>
</table>
| Data service provider contract – CGI IT UK | • CGI signed an eight-year US$118.7 million contract  
• Develop and operate the system controlling the movement of messages to and from smart meters |
| Communications Service Provider contract for the North region – Arqiva Smart Metering | • Arqiva signed a 15-year US$989.7 million contract  
• Provide wide area communications to and from the smart meters |
| Communications Service Provider contracts for the Center and South – Telefonica UK | • Telefonica UK signed a 15-year US$2.4 billion contract  
• Provide wide area communications to and from the smart meters |
| Smart Energy Code Administrator and Secretariat – Gemserv | • Signed a four-year US$15.8 million contract with the Smart Energy Code Company  
• Develop and maintain the Smart Energy Code |
How EY’s Global Telecommunications Center can help your business

Telecommunications operators are facing a rapidly transforming business model. Competition from technology companies is creating challenges around customer ownership. Service innovation, pricing pressures and network capacity are intensifying scrutiny on return on investment. Additionally, regulatory pressures and shareholder expectations require agility and cost efficiency. If you are facing these challenges, we can provide a sector-based perspective to addressing your assurance, advisory, transaction and tax needs. Our Global Telecommunications Center is a virtual hub that brings together people, cultures and leading ideas from across the world. Whatever your need, we can help you improve the performance of your business.