

# THE IoT-NOW VALUE CHAIN

## Monetize IoT Opportunities NOW with Managed IoT Services



### KEY BUSINESS BENEFITS

- Enables full monetization of IoT services by CSPs and MVNOs
- Lower upfront investment, reduced risk and fast time to market with hosted offering
- Increases brand attachment and customer engagement with bundling of innovative services

### KEY FEATURES

- Hosted offering with end-to-end coverage from applications to platforms, from device management to connectivity management
- IoT-tailored business and operations management
- Variety of white-labeled managed IoT services

### READY-TO-OFFER MANAGED IoT SERVICES

- Connected Car
- Fleet Management
- Usage Based Insurance
- Passenger/Vehicle Tracking
- Smart Building
- Video Surveillance
- Asset Monitoring
- Wellness and Remote Healthcare

## Summary

*The demand for Internet of Things (IoT) services is expected to explode in the next few years. Communication Services Providers (CSPs) must act now if they want to make IoT services a great capitalization opportunity rather than yet another burden on the capacity of their network.*

*Delivering IoT and M2M services requires more than connectivity and in spite of their strong interest many CSPs, MVNOs, and Enterprises are unable to harvest these new revenue opportunities. The top three challenges they face with monetizing IoT are:*

- *Lack of M2M service expertise and end-to-end offering*
- *Investment risk to create a complex industry solution*
- *Business and operations support systems unfit for IoT*

*To overcome these challenges Oracle Communications and Tata Consultancy Services (TCS) joined forces to create a hosted offering of managed IoT Services. This solution enables Service providers to be in control of the IoT value chain by quickly delivering to the market innovative services, with lower entry costs and risk, via a comprehensive managed solution, which offers several white-labeled IoT services that can be rapidly branded, delivered, and supported.*

*The solution is based on market-proven technologies by Oracle and TCS, deployed and managed by TCS, and offered through multiple commercial models:*

- *Revenue sharing based*
- *Subscription based*
- *Hybrid*

## IoT: Opportunities, Challenges, and Solution

According to GSMA research, the IoT business has a potential of generating 1.2 trillion dollars in business from 12 billion mobile connected devices for the Telecommunications industry by 2020. Communication Service Providers (CSPs) and Mobile Virtual Network Operators (MVNOs) have a unique opportunity to deliver innovative IoT solutions and grow revenues by monetizing M2M and IoT services, but to do so their contribution to IoT must go beyond the current “connectivity” solutions: they must expand to provide end to end IoT services to consumers and enterprises.

Both CSPs and MVNOs control a critical part of an IoT offering: the connectivity; both CSPs and MVNOs know how to sell services, and both have established market presence within the area of operations. Nevertheless delivering a complete IoT offering presents several challenges for a CSP or a MVNO: it requires knowledge of specific industries (such as automotive, healthcare, home automation, or security), expertise in developing and running IoT services, and the business flexibility to support new models for management of business, revenues, and partners.

On one hand many CSPs and MVNOs recognize in IoT the opportunity to expand revenue streams with innovative new services, augmented geographies, and new business models and increase customer retention with higher value bundles of connectivity and IoT services. On the other hand their lack of IoT service expertise, the investment risks to create complex industry solutions, and their existing business and support systems that are unfit for the innovative IoT services, stop CSPs and MVNOs from being able to monetize this opportunity.

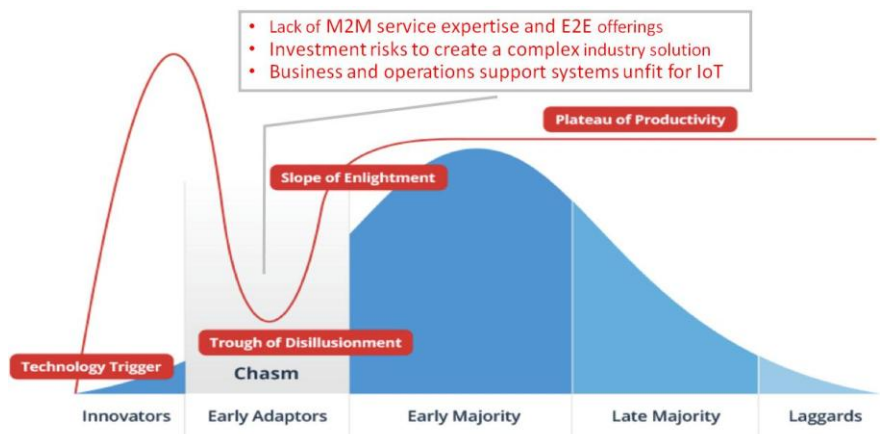


Figure 1 – Many CSPs and MVNOs cannot cross the chasm and monetize IoT

Unfortunately the high complexity of delivering IoT services often stops most CSPs and MVNOs from monetizing the rising opportunities associated to these innovative services.

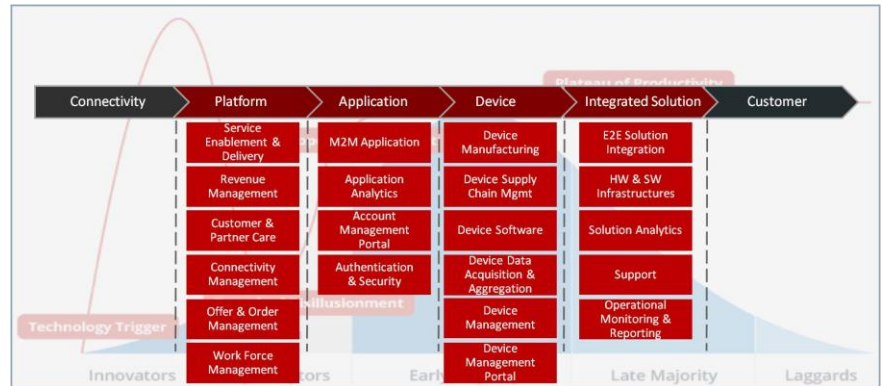


Figure 2 - High complexity with delivering IoT services

In order to close the gap that stops CSPs from monetizing IoT services, Oracle Communications and Tata Consultancy Services have joined forces and created a hosted offering of managed IoT Services. This solution enables Service providers to be in control of the IoT value chain by quickly delivering to the market innovative services, with lower entry costs and risk, via a comprehensive managed solution, which offers several white-labeled IoT services that can be rapidly branded, delivered, and supported.

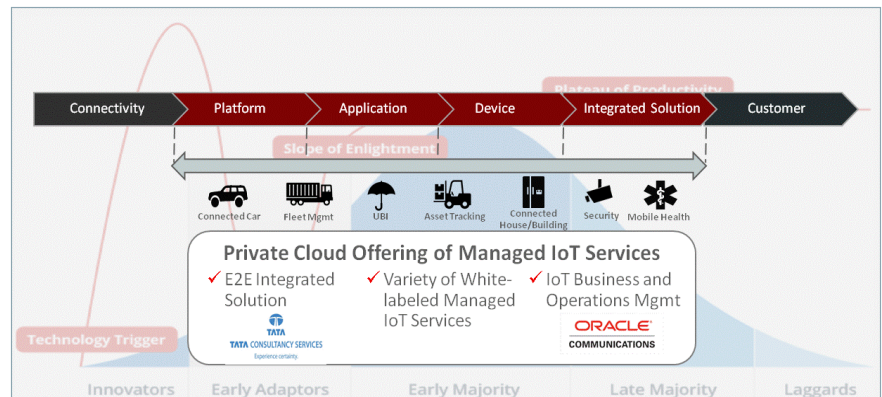


Figure 3 - Private Cloud Offering of Managed IoT Services NOW

## Founded on Market-Proven Products & Solutions

At its foundation the new hosted offering has market proven solutions and technologies by Oracle and Tata Consultancy Services: TCS Connected Universe Platform, Oracle Communications Connected World solution, and best-in-class Oracle Fusion Middleware.

TCS Connected Universe Platform (TCUP) with Oracle Fusion Middleware offers an M2M SDP (Service Delivery Platform) that allow enterprises to easily develop, deploy, and administer IoT services. The major components of the M2M SDP platform include device management, sensor data management, real-time/batch analytics, visualization and application lifecycle support. Through powerful ontology and reasoning support, the platform enables rich analytics of sensor data from billions of internet-connected sensors. TCUP also provides support for critical IoT functions such as connectivity management, Device Management, Event Processing, and Device SW Integration.

The Oracle Communications Connected World solution enables service providers to rapidly create, deliver, and support innovative IoT services through a market-proven standard-certified solution that will fast-track customer acquisition, facilitate partner on-boarding, and accelerate monetization. The solution provide the extreme flexibility required to support innovative IoT services and enable heterogeneous business models (B2B, B2B2B2C, B2C), comprehensive partner management from on-boarding to revenue settlement, engaging Customer Experience, flexible payment and revenue models, support for global markets, and the high scalability required to handle IoT transactions volumes.

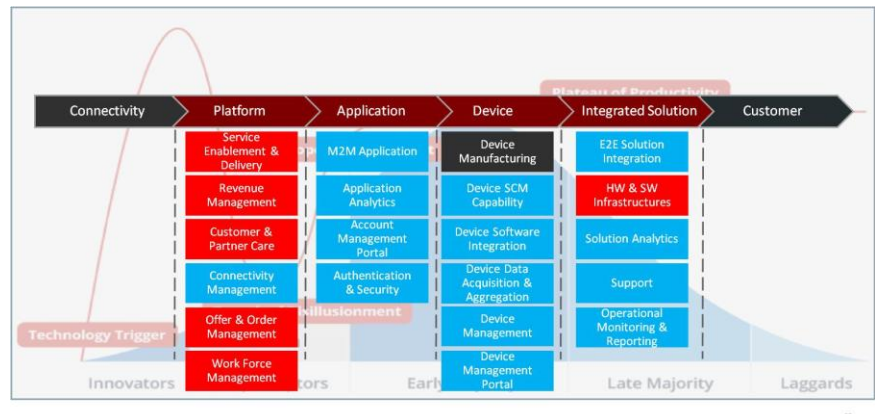






Figure 4 - Functional footprint for hosted solution

## White-labeled Managed IoT Services

The hosted solution includes several white-labeled IoT applications: Connected Car, Fleet Management, Usage Based Insurance, Connected House/Building, Video Surveillance, Asset Monitoring, and Connected Health. These white-labeled services can be rapidly branded and deployed and then

run as managed services. These enable service providers to rapidly launch innovative IoT services without having to undertake the investment risks of creating complex industry solutions.

The following table summarizes the white labeled services currently available in the hosted solution. While the white labeled-services greatly expedite the launch of branded services they are no mean a limitation to the services that can be offered and other type of IoT services can be custom developed upon request using the underlying platform.

 <h3>Connected Car</h3> <p><b>CONNECT</b> Telematics device, Accelerometer, Data connection</p> <p><b>MONITOR &amp; MANAGE</b> Geo location, Video and entertainment downloads</p> <p><b>APPLICATIONS</b> Traditional telematics, Infotainment, Car hotspot, Geo-fencing.</p> <p><b>TARGET MARKET</b> Auto-Makers, Car Owners</p>	 <h3>Fleet Management</h3> <p><b>CONNECT</b> Telematics device</p> <p><b>MONITOR &amp; MANAGE</b> Geo Location, Accelerometer, Speed, Video Feeds</p> <p><b>APPLICATIONS</b> Location Tracking, Trip Reports, Driving behavior Analysis, Shipment Tracking, Real Time Fleet Mgmt.</p> <p><b>TARGET MARKET</b> Private &amp; Public Fleets</p>
 <h3>Usage Based Insurance</h3> <p><b>CONNECT</b> Telematics device, Accelerometer</p> <p><b>MONITOR &amp; MANAGE</b> Geo Location, Acceleration, Speed, Passenger, Braking</p> <p><b>APPLICATIONS</b> Driving behavior Analysis, Accident Location Tracking, Insurance Premium Discounting</p> <p><b>TARGET MARKET</b> Insurance Companies</p>	 <h3>Passenger/Vehicle Tracking</h3> <p><b>CONNECT</b> Telematics device</p> <p><b>MONITOR &amp; MANAGE</b> Geo Location, Accelerometer, Speed, Passenger counts, Video Feeds</p> <p><b>APPLICATIONS</b> Location Tracking, Trip Reports, Driving behavior Analysis, Passenger Authorization, etc.</p> <p><b>TARGET MARKET</b> Taxis, Public transportation, Car rentals. Uber-like services</p>



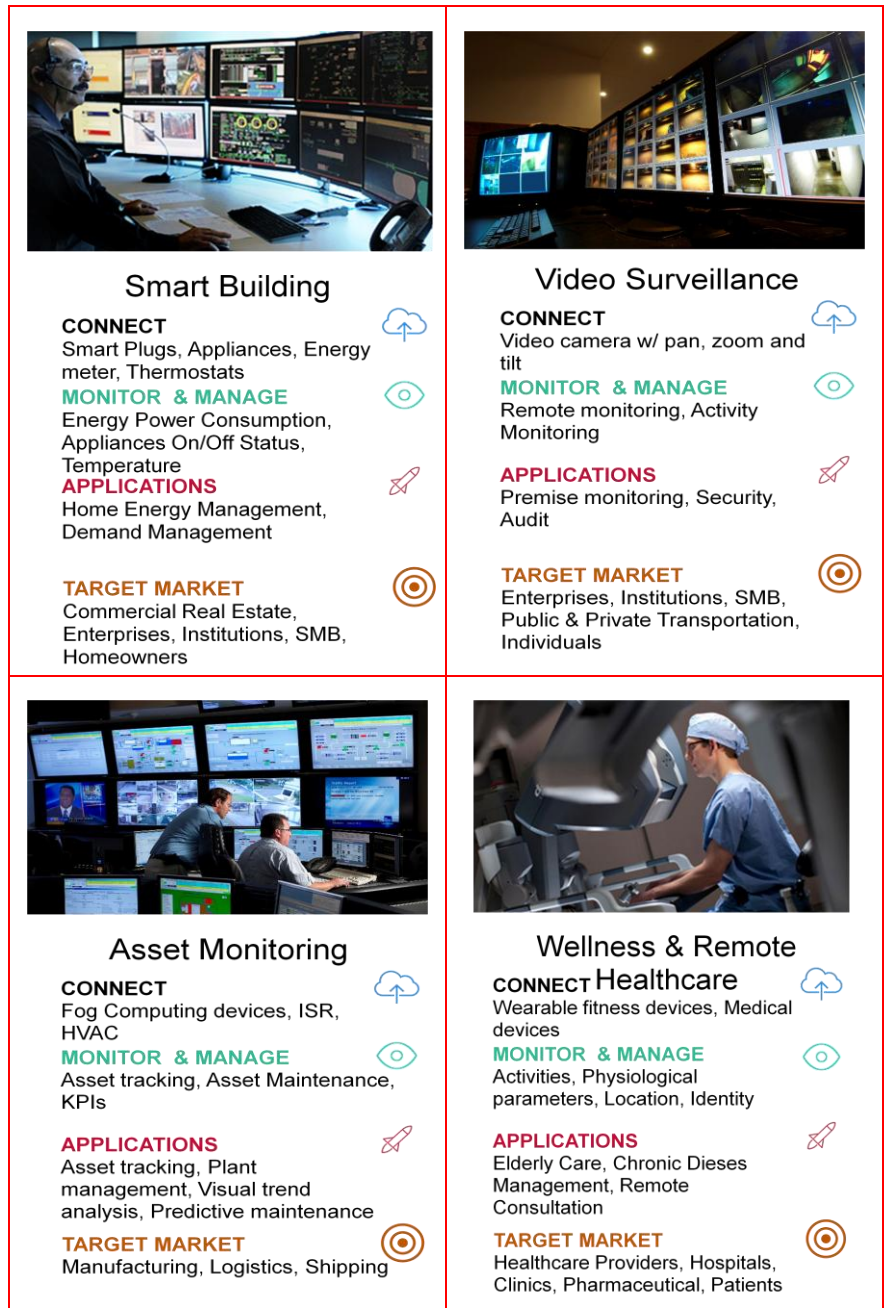


Figure 5 - White-labeled Managed IoT Services - NOW

## Fast-tracked Offering with Lower Entry Costs and Risk

In the previous sections we have seen how the private cloud offering jointly created by Oracle and TCS provides an end-to-end integrated solution with IoT-tailored business and operations management and a variety of white-labeled managed IoT services. Critical to the governance of the solution are the *on-boarding process* where a dedicated hosted solution is set up and

branded for a service provider and the *on-going process* where the day-to-day services as well as business and operations are run for the service provider.



Figure 6 - On-boarding Process

The on-boarding process is composed of three steps and typically last 100 days when using existing white labeled services. The steps are:

1. Discover & Capture Needs
  - Determine initial needs, potential & growth plans
  - Determine additional supplier/partnership needs
  - Define contract for one or more IoT applications
  - Define integration needs between in-premise & hosted IoT solution
2. Plan, Design, & Develop
  - Establish secure connectivity between in-premise and hosted IoT solution and complete integration
  - IoT solution training
3. Package & Sell
  - Personalize white-label IoT applications from hosted IoT solution
  - Create sales packages and bundles of IoT service offerings
  - Launch IoT offerings to the markets

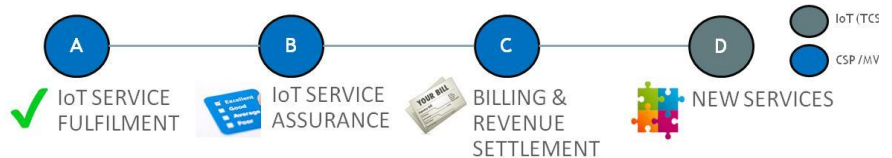


Figure 7 - On-going Process

The on-going process is composed of the following steps:

- A. IoT Service Fulfilment
  - Service design

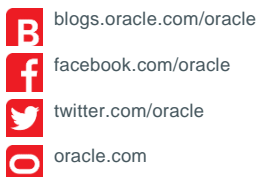
- Customer order management
  - Workforce management
  - Service deployment & activation
- B. IoT Service Assurance
- SLA monitoring
  - Fault, performance, & trouble-ticket management
  - Partner management
  - Service change management
- C. Billing & Revenue Settlements
- Event, volume & usage charging
  - Split & sponsorship billing
  - Convergent charging
  - Partner settlement



#### CONTACT US

For more information about IoT-NOW, contact us [andrea.canessa@oracle.com](mailto:andrea.canessa@oracle.com) or [e.asharaf@tcs.com](mailto:e.asharaf@tcs.com).

#### CONNECT WITH US



[blogs.oracle.com/oracle](http://blogs.oracle.com/oracle)

[facebook.com/oracle](http://facebook.com/oracle)

[twitter.com/oracle](http://twitter.com/oracle)

[oracle.com](http://oracle.com)

#### Hardware and Software, Engineered to Work Together

Copyright © 2015, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. 0115



Oracle is committed to developing practices and products that help protect the environment