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INTERNET OF THINGS
CLOUD SERVICE



Service Excellence Innovation in the Digital Age

Connect, Analyze and Integrate with Oracle Internet
of Things Cloud Service

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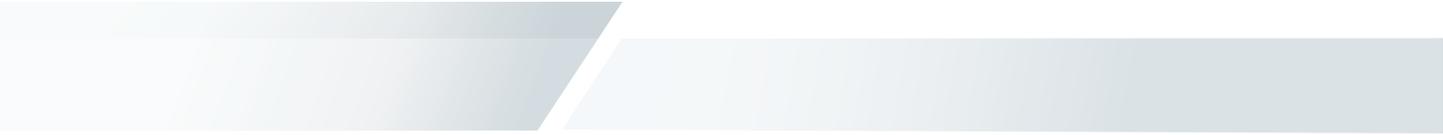


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“The key to success lies in understanding customers: their preferences and behaviors, likes and dislikes. These insights are the foundation on which brands can build highly differentiated products and services.”

Seventy percent of the world’s business is service focused, and a large proportion of the market comprises people and equipment deployed in the field; be it an elevator in an airport, a turbine on an oil platform, an earth mover in a mine, a printer in an office, a medical device at home, a sludge blanket managing water runoff, a ticket machine in a railway station or a device measuring electricity flow and outage along a wire in the home.

The list is seemingly endless, but with many businesses generating more than 50 percent of their revenues from service and an even greater proportion of their profits, it is clear that service is a key differentiator and means to win, retain, or lose a customer. Customer expectations have changed and you cannot change them back. Customers demand service 24 hours a day, seven days a week, and 52 weeks a year with near-zero equipment failure. With multiple choices of suppliers, they will vote with their feet and move to the competition if their requirements are not met. The most disruptive force in today’s market, therefore, is not technology but the customer’s ability to choose.

Ensuring customers have the best possible experience is essential to reduce churn and create new business opportunities. In this new world, digital- and mobile-centric business models enabled by the Internet of Things (IoT) are quickly becoming a route to innovation and providing the difference between success and failure.

Public Transport

With global passenger traffic expected to double by 2020, the railway industry worldwide faces pressure to improve the passenger experience. To passengers, that might mean improved on-time performance, more on-board amenities, and more timely information. For railway operators, however, the most important part of the experience is getting passengers safely to their destinations. Among many of the initiatives to update the world’s aging transportation infrastructure, the introduction and use of train management systems (TMS) is a key priority. Trains are becoming interconnected communication hubs, transmitting data among themselves and to network control centers while also receiving instructions from the control centers. IoT-enabled speed monitoring and control increases passengers’ safety enormously. As an ancillary service, platform billboard information can be enhanced with up-to-date arrival times and unexpected delays due to the delivery of more precise and location-based information. And let’s not forget: absence of accurate information is one of the main reasons for customer dissatisfaction in public transport, whether trains, metro, or buses. All these services are enabled by IoT.

The Digital Imperative

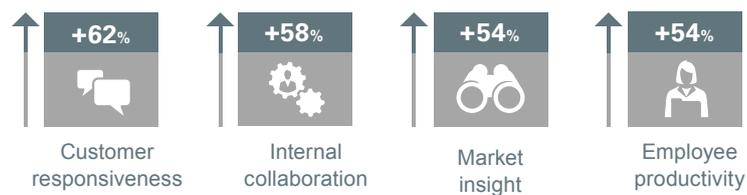
Businesses in customer-centric industries must do all in their power to innovate, gain competitive edge, and provide compelling experiences and products to their customers in order to build loyalty. The key to success lies in understanding customers: their preferences and behaviors, likes and dislikes. These insights are the foundation on which brands can build highly differentiated products and services.

While service is vital to maintaining and extending the customer base, the rise of new digital technologies provides a tremendous opportunity for smart service to engage in a new relationship with their customers. No longer is the customer “out there”; instead, they are part of the very fabric of how an organization operates day to day—from a direct connection to the customer’s assets in the field, through the use of social tools to understand and engage with the customer, and more recently advanced data discovery to capture the customer’s true sentiment about the products and brand.

“With the advent of digital, organizations are able to connect their customer experience capabilities from core to edge and gain real insight into their customers’ needs, motivations, and satisfaction levels.”

As businesses adapt to the new realities of the digital market, the smallest competitive advantage will be absolutely crucial. IoT, big data, mobile, social, and cloud computing – “digital” – are combining with line of business sales, marketing, and service capabilities to provide businesses with new ways of understanding their customers, products, and supply chains and driving revenue.

Increased competitive advantages seen by early IoT adopters include:



Harvard Business Review, ‘Internet of Things: Science Fiction or Business Fact?’, 2014

Enhancing the Customer Experience

When it comes to customer experience, the challenges brands face are clear. Firstly, they must get the basics right and leverage digital to connect the entire market-sell-service lifecycle. Through innovations such as proximity-based marketing (where location-specific digital promotions can be sent to consumers on an opt-in basis) and self-service (where customers take control of how they engage with brands), businesses can keep customers happy while controlling costs. If organizations do this, not only will they cement and extend their market position, but they will gain fresh insight to feed R&D so that the next generation of products is more advanced than the previous—and those of competitors.

Digital Vending and ATM Machines

The next generation of vending and ATM machines are already being trialled, and new business models and services are being crafted as a result. Take the example of a drinks machine connected in a public space. Not only is the equipment monitored for stocking status or potential failure, but rich connectivity enables new services such as price promotions, testing new drink mixes, recognizing a consumer, offering proximity-based rewards, and accepting contactless payment. Being able to connect, integrate, and analyze usage drives greater insight, revenue, and product understanding. In the world of ATM equipment, field assets are connected in real-time for the purposes of monitoring performance for future development, predicting and preventing failure, and completing over-the-air fixes before failure occurs or before the need for an expensive truck roll. The net result is increased revenues and asset uptime, reduced cost, and greater customer satisfaction—all enabled by IoT.

Secondly, businesses must bring service to the fore. Service is no longer just a post-sales, operational cost or afterthought in the customer experience journey. It is no longer good enough to only focus on scheduling an additional job per day for each service technician to drive down service operation costs. With the advent of digital, organizations are able to connect their customer experience capabilities from core to edge and gain real insight into their customers’ needs, motivations, and satisfaction levels. They should be able to identify service issues before the customer notices, perform upgrades over-the-air and identify potential upsell opportunities and new product offerings to increase service operation revenue and drive customer loyalty.



“As a key foundation to delivering service excellence, businesses need to build an IoT strategy that enables them to remotely monitor and maintain their business assets and to track moveable assets. These capabilities allow businesses to add a new dimension to customer centricity”

Smart Meters and the Connected Home

In the near future, every consumer will have a smart meter to manage water, gas, and electricity consumption in real-time. Although today much of this data is used to drive billing, the real potential and value to the consumer will be through driving a change in behavior. These meters will not only measure utility usage; they will be part of a holistic connected home platform in which appliances, lighting, and security systems are connected, provisioned, and optimized for efficiency. Of course, the consumer will gain insight into their consumption and be able to take action to reduce cost. However, the benefits will extend to alerts that warn of potential appliance failure—perhaps due to overloading a washing machine—or to streaming new functionality to connected home devices. Smart meters connected to IoT will enable service without the need for onsite intervention..

Indeed, controlling costs is an ongoing necessity in an environment which demands ever-more in terms of innovation. Businesses need to do all in their power to reduce the cost of sales and improve cross-sell and up-sell capabilities.

Data is integral to solving all of these challenges, as only data can provide the insights needed to build better products and services and make sales processes more efficient. This is where IoT provides unrivalled value. As a key foundation to delivering service excellence, businesses need to build an IoT strategy that enables them to remotely monitor and maintain their business assets and to track moveable assets. These capabilities allow businesses to add a new dimension to customer centricity as they can combine customer information with environment and context. This data can then be fed into customer service systems to enhance the customer experience.

#1 IoT helps product R&D teams innovate

It is vital for manufacturers, to identify product usage patterns for the next generation of products; the more data they can collect on how customers use products, and how products perform when used, the better insight they will have on how to improve them. As described in the digital vending example, IoT enables manufacturers and service providers to identify product usage patterns—for example, when testing new drinks mixes. By embedding IoT sensors and data storage devices into products, manufacturers can gather invaluable field data on product performance and customer behavior. This data can also be provided to sales and marketing teams to enhance cross- and up-sell opportunities.

#2 IoT helps control costs and enhances customer satisfaction

Equipment manufacturers have access to vast amounts of operational data that can be easily monetized, while enabling their customers to significantly improve operations and margins. For example, an electric sub-system supplier capturing granular power usage can provide the utility with line faults and operational metrics that provide new operational insights and services for which the utility would be prepared to pay. Similarly, businesses can use real-time data from devices to actively balance supply and demand curves—while taking pricing elasticity into account—in order to rapidly pair demand with available supply.

#3 IoT improves customer self-service

IoT improves the customer experience by enabling self-service. In many major cities, for example, passengers on metro and underground services no longer need to pay for tickets. Instead, they simply hold their smartphone near the gate sensor to open it, and their bank account is automatically billed for the fare amount. In another example, a city-wide car park provider enables car parks with sensors for alerting customers the moment a slot has appeared near their location. This not only improves customer service, but it also reduces the time the parking space is unoccupied and not generating revenue.



From improving the customer experience to increasing customer loyalty, service businesses can use IoT to better track customer behavior and preferences to deliver rewards and more tailored services that differentiate their businesses.

Start Transforming Your Business to Drive Growth and Value

IoT is not a technology of the future: it is here today and is already being used to innovate and transform. Worldwide, businesses are drawing on the insights delivered by connected devices to create ever better customer experiences that will come to dominate their respective industries.

IoT data is the secret to great customer experiences, but it can only live up to this promise if it is collected and analyzed by all relevant parties within the business. The cloud provides the best possible means of releasing the value of IoT data by seamlessly integrating it with relevant business applications.

Here are three things all businesses need to know about embracing IoT enabled customer service:

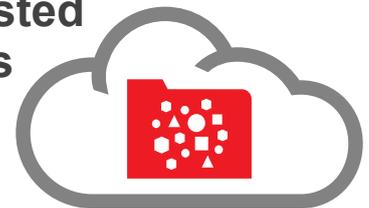
1. IoT data is BIG and fast: The business benefits of IoT will only be realized if businesses can capture, sort, piece together, and make sense of that data. Crucially, IoT creates a huge volume of data at high speed and businesses must be able to extract value from it on the fly. That means they need to be able to collect, store, and retrieve data from a variety of devices representing many different operating systems, protocols, and standards. Then, the data must be analyzed to realize the potential.

2. The cloud is key: The cloud enables IoT-based approaches to customer service, as it offers high degrees of agility as well as the ability to collect large volumes of data from the enterprise and beyond. Additionally, as a highly scalable platform, the cloud is ideal for the 'burst and peak' nature of IoT traffic. Moreover, cloud technology offerings lower the bar to entry, so organizations can start with small deployments and scale up.

3. IoT demands integration: Businesses must ensure vital IoT data gets to the people that need it, including R&D teams that use the data to improve future product design and sales and marketing teams who can design up-sell and cross-sell opportunities.

90% of all IoT data will be hosted on service provider platforms within the next five years,

as cloud computing reduces the complexity of supporting IoT "data blending"



IDC Press Release, IoT Market Forecast: Worldwide IoT Predictions for 2015, December 7, 2014

Connect, Analyze, Integrate

To derive value from Internet of Things, enterprises need not only to collect this data but also to secure, analyze, and integrate it with enterprise applications and processes, generating the actions that define and drive the value proposition. Oracle IoT Cloud Service lets organizations connect, analyze, and integrate IoT data.

Connect - Securely and reliably connect any device in any market to bi-directionally transact data, accelerating your time to market with an open, secure, and scalable platform.

“Cloud enabled-IoT helps transform businesses into digital disruptors by providing rich data on customer behavior and the performance of business assets and products. This information helps businesses deliver increasingly innovative products that map exactly to customers’ real-world needs”

Analyze - Perform real-time, big data, and predictive analytics to deliver the enriched enterprise data that enables you to identify new services and improve customer satisfaction.

Integrate - Ensure the right data is available to the right application at the right time using open interfaces and preintegrations with Oracle’s platform-as-a-service (PaaS), software-as-a-service (SaaS) and on-premises enterprise application offerings to reduce total cost of ownership for IoT data-enriched applications and processes.

Why Oracle? Because with more than 400,000 customers—including 100 of the Fortune 100—and with deployments across a wide range of industries in more than 145 countries, Oracle offers a comprehensive and fully integrated stack of cloud applications, platform services, and engineered systems. Oracle also has decades of expertise in managing and extracting value from data.

What’s more, Oracle Internet of Things Cloud Service empowers companies to unlock even greater business value from the many Oracle technologies and applications they already rely on to run their businesses.

Imagine the value add of IoT for the following CRM applications:

- Enrich customer interaction with Oracle Service Cloud
- Improve resource dispatch efficiency and modernization with Oracle’s field service management solutions
- Deliver innovative hospitality solutions with Oracle Hospitality Micros or Opera cloud service offerings

Cloud Enabled IoT

Cloud enabled-IoT helps transform businesses into digital disruptors by providing rich data on customer behavior and the performance of business assets and products. This information helps businesses deliver increasingly innovative products that map exactly to customers’ real-world needs and create new customer experiences that build loyalty and reduce the cost of doing business.

Oracle Internet of Things Cloud Service enables all organizations to address their customers’ needs. The Oracle platform has been designed to IoT-enable an organization quickly and with low risk. Oracle is also uniquely positioned to help line-of-business managers simplify their IoT planning and implementation. Oracle IoT Cloud Service can integrate new IoT systems with enterprise applications, and it empowers organizations to generate value from IoT devices by correlating and integrating the right data at the right time. With Oracle IoT Cloud Service, your company can deliver innovative products, services, and business models to transform your digital business.

If you would like to find out how Oracle IoT Cloud Service can transform your approach to asset monitoring and maintenance, visit oracle.com/iotdiscoveryworkshop to sign up for a complimentary IoT Discovery Workshop.

For more information on Oracle IoT Cloud Service, please visit cloud.oracle.com/iot

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