Watson IoT

Watson IoT learns from, and infuses intelligence into, the physical world to transform business and enhance the human experience.

Welcome to the era of cognitive IoT

IBM

Think about the effect of the Internet of Things (IoT)—we're radically transforming customer experiences and deepening critical relationships. Powerfully enhancing operational efficiencies. Disrupting professions, businesses and even entire industries. And we're doing it all today with only 12 percent of the data. But that's changing.

By bringing together the IoT with IBM Watson™ cognitive computing technologies, we're infusing a new kind of thinking into objects, systems and processes. Watson technology understands, reasons and learns. It communicates in natural, human terms. It understands context and nuance, enabling it to not only uncover new insights but also unearth entirely new pathways to explore and possibilities to imagine.

Suddenly, things are talking to other things, learning from other things—and talking to us. We're giving rise to cognitive IoT.

In learning from the physical world, we're rapidly unlocking value from the untapped 88 percent of data. And as we do, there will be no limits on what we can achieve.

That's the promise of Watson IoT.

The IoT has taken hold

What once seemed like hyperbole now seems like understatement.

MORE CONNECTED OBJECTS AND DEVICES

NEARLY 13 BILLION connected "things" in use today[3]

MORE THAN 29 BILLION projected to be in use by 2020[4]

19.2 PERCENT compound annual growth rate (CAGR) from 2014 to 2020[5]

MASSIVE IMPACT

USD 1.7 TRILLION in value added by the IoT to the global economy in 2019[6]

KEY TO BUSINESS TRANSFORMATION

82 PERCENT of enterprise decision makers say IoT is either strategic or transformative to their enterprise.[7]

The IoT requires a new approach

There's massive opportunity to be had, but the IoT also presents a significant data challenge, as the scale, complexity and diversity of IoT data threatens to overwhelm traditional computing systems.

Traditional programmable computing systems are designed to handle specific scenarios and data sets. IoT data doesn't play by traditional rules. Images, video, sound and machine data of many types are combined with social media, weather and enterprise data, providing context and relevance that sharpens insights.

Much of this data must be processed at the network edge, whether because of security concerns, regulatory and compliance requirements, costs, or simply the need for speed.

Cognitive computing technologies are explicitly designed for the task. They provide the means for understanding and extending the insights gained from IoT data.

In the era of cognitive IoT, this is where competitive advantage first takes root.

EXPAND THE INPUT, DEEPEN THE UNDERSTANDING, BROADEN THE POSSIBILITIES

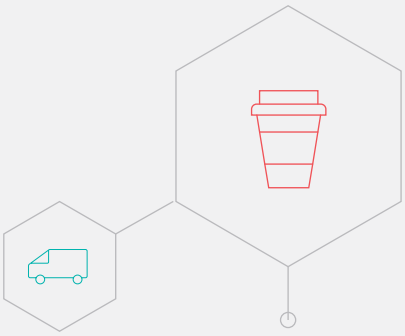
IBM Watson technology represents the leading edge of cognitive computing. Using natural language to communicate with people, Watson eliminates the need for users to know complex coding and have specialized IT expertise.

Watson forever shifts the conversation from the "What is the answer?" type of responses delivered by programmable computing systems to "What are the possibilities?"

That's because Watson creates and explores its own hypotheses. Watson feasts on rich digital rivers of IoT data and other inputs, redefining data exploration and uncovering patterns and insights previously unattainable.

Proven value, immediate opportunity

Forget someday. Cognitive IoT is here. And it's already changing—everything. Leaders are putting the physical world to work. Here's how:



1. BOOST OPERATIONAL EFFICIENCY
2. TRANSFORM THE CUSTOMER EXPERIENCE
3. DISRUPT, OR BE DISRUPTED

CUMMINS INC.
This engine manufacturer collects and transmits real-time performance data and uses predictive analytics to diagnose issues remotely and keep availability high.

Boost operational efficiency

Leaders are gaining new levels of visibility across the supply chain and into previously obscured business processes. They're identifying bottlenecks and inefficiencies and spotlighting hidden costs. They're translating these insights to actions—through the device directly or, if needed, with human interaction. They're optimizing performance, empowering employees and cutting costs organizationwide.

NEW SOUTH WALES HEALTH
Southeast Australia's New South Wales public health-care system uses IoT insights to improve patient outcomes and operational efficiency across the system's 220 hospitals that span 17 regions.

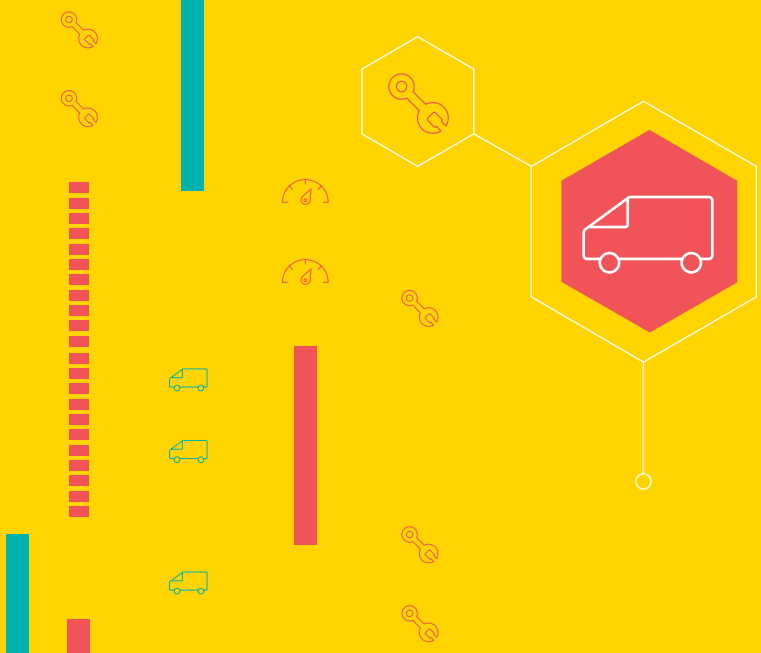
STARBUCKS

IoT-based insights enable the coffee purveyor to identify and open new locations faster, driving top-line revenue growth, while IoT data feeds integrated facilities management tools to keep global operations running efficiently.

2

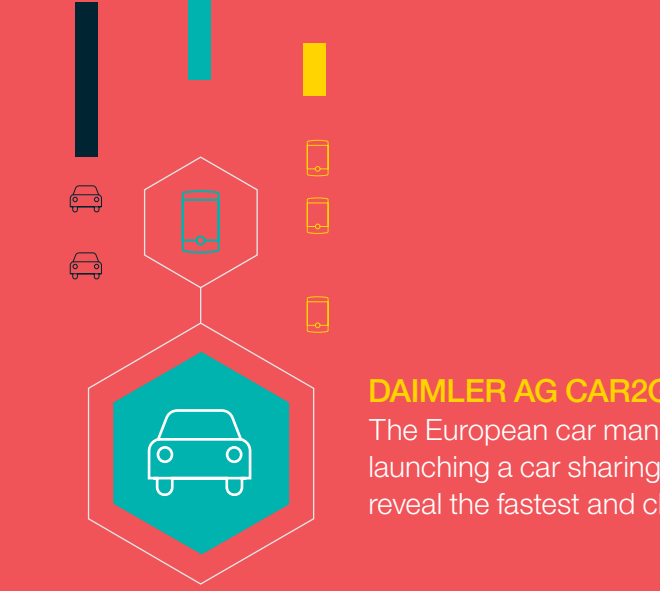
Transform the customer experience and strengthen relationships

Leaders are offering products and services designed to continually adapt—in context—to the connected consumer. Achieving new levels of customer engagement. Gaining feedback throughout the product lifecycle. As a result, they're seeing greater loyalty and enhanced revenue and attaining true marketplace differentiation.



SCANIA GROUP

The automotive giant goes beyond truck manufacturing by using vehicle and other IoT data to cut fuel costs and improve safety for drivers and fleet planners.

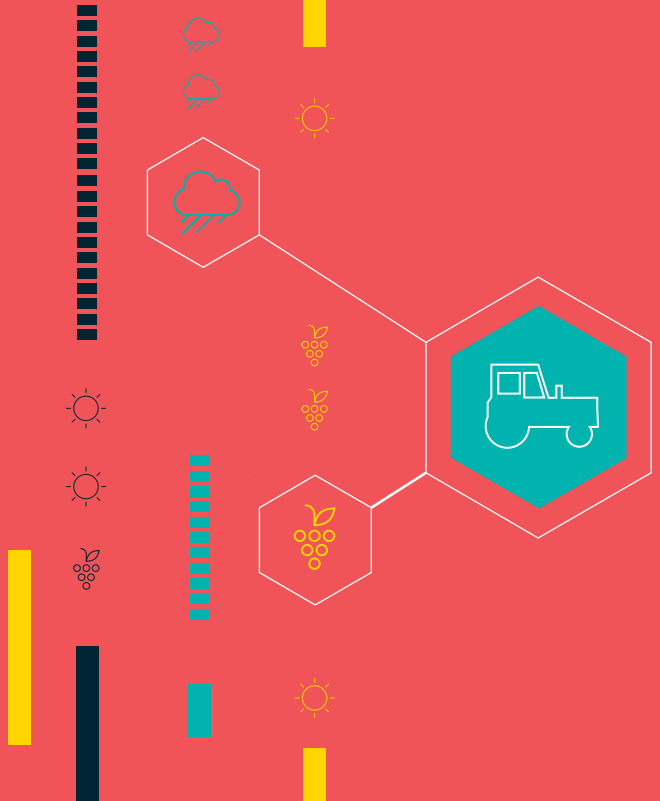


DAIMLER AG CAR2GO

The European car manufacturer reimagined its business model, launching a car sharing service and mobile app designed to reveal the fastest and cheapest ways to get from A to B.

Disrupt, or be disrupted

Leaders are reimagining business models based on the insights gained through IoT data. Monetizing data through asset-based online marketplaces. Garnering new revenue from existing products and services. Partnering in new ways, with new players and across industries. Through more intelligent systems and processes, they're cutting time to market and outmaneuvering competitors.



EZ-FARM

This IoT-enabled remote monitoring solution helps boost crop yields, increase sustainability and safeguard the food supply, helping small-scale farmers in Africa improve productivity and grow revenue.

Outthink the competition with cognitive IoT

Businesses that implement cognitive IoT will be distinguished in five key ways:

DEEPER HUMAN ENGAGEMENT

Cognitive IoT spotlights the ways consumers interact with the world, helping businesses create a comprehensive picture of the individual, enabling deeper, more relevant engagement.

EXTENDED EXPERTISE

Cognitive IoT provides context from billions of physical objects—far more than any human could comprehend. This data dramatically expands and continually improves the knowledge base experts and practitioners can tap into for advice.

PRODUCTS AND SERVICES INFUSED WITH COGNITION

Where code and data go, cognition can now follow, as cognitive IoT exponentially extends the universe of digital products and services that can be infused with intelligence.

COGNITIVE PROCESSES AND OPERATIONS

Cognitive IoT gathers critical context from assets, equipment, parts, wearables, facilities and more. This data is used to understand, reason and learn about workflows and environments and then recommend and execute optimization measures.

ENHANCED EXPLORATION AND DISCOVERY

Cognitive IoT provides a critical feedback loop that was missing before. Business people can ask questions to cognitive systems or things in everyday language, opening the door to new insights, revealing opportunities, inviting exploration and fueling new cultures of curiosity.

Ready your business for cognitive IoT

As with any worthwhile strategic initiative, evolving your infrastructure and organization to get the most from cognitive IoT can be a significant undertaking, but taking three key steps can help make the transition faster and easier while still lowering risk.

START BY DEPLOYING A HIGHLY SECURE, SCALABLE AND OPEN PLATFORM DESIGNED FOR COGNITIVE IOT

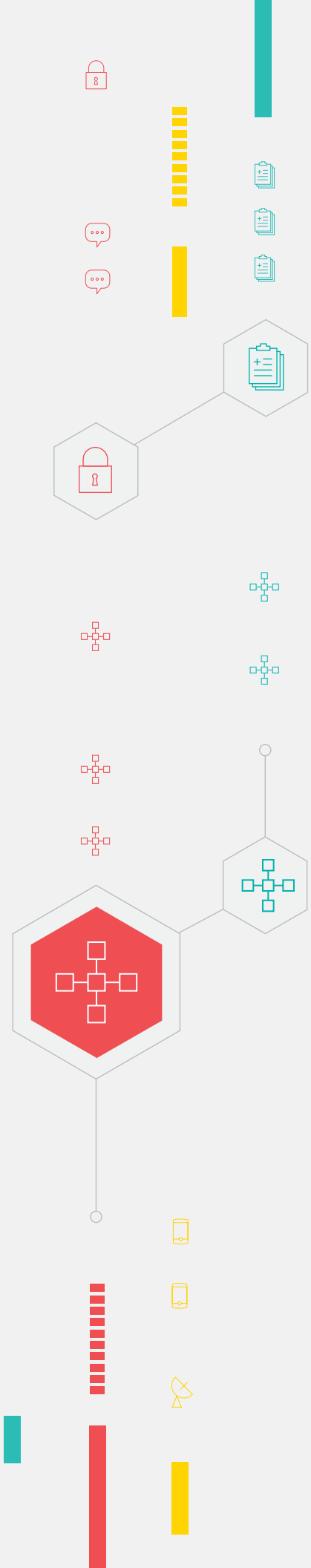
You need a platform that makes it easy to connect devices and seamlessly scale to millions of connections around the world. Privacy and multilayered security must be tightly integrated. And you need powerful, real-time, predictive, cognitive and contextual analytics to gain actionable insights from IoT data.

APPLY COGNITIVE IOT EXPERTISE, APPLICATIONS AND TECHNOLOGIES TO SOLVE BUSINESS CHALLENGES

Leverage the continuous feedback from connected operations and products to solve business challenges and transform customer experiences. Put industry-specific cognitive IoT solutions to work across your organization and supply chain, where they can deliver rich, relevant insights and dramatically enhance operational efficiency.

BUILD A COGNITIVE STRATEGY FEATURING NEW, DISRUPTIVE BUSINESS MODELS

Take advantage of the new sources and types of IoT data, joined with unstructured dark data, external data such as weather and social, and enterprise data. Leverage these as the body of knowledge for your cognitive systems. Then use IoT technologies to act instantly on the recommendations your cognitive systems generate.



IBM solutions for cognitive IoT

IBM offers the technologies, services, expertise and ecosystem needed to help maximize the effect of cognitive IoT. These include:

A COMPREHENSIVE CLOUD-BASED DEVELOPMENT AND PRODUCTION PLATFORM, so you can collaborate freely and infuse intelligence into your applications and services.

- Built from the ground up for IoT
- Rich analytics capabilities
- Proven, multilayered security
- Vibrant and growing ecosystem of data and development allies
- Seamless cloud delivery globally, in accordance with regional and local regulations

SOFTWARE AND SERVICES TAILORED TO SPECIFIC INDUSTRIES AND BUSINESS NEEDS, so you can begin generating value quickly.

- Comprehensive portfolio of IoT applications
- Industry-specific solutions and capabilities, including an extensive portfolio of third-party solutions
- Expertise provided by the Global Business Services® IoT practice

BROAD AND DEEP COGNITIVE AND IOT CAPABILITIES extend cognition throughout the organization, so you can outthink and outperform the competition.

- IBM Watson technologies and capabilities, easily accessed through a broad and growing set of application programming interfaces (APIs), including four specifically designed to advance cognitive IoT
- Expertise provided by the IBM Global Business Services cognitive business practice
- Digital transformation and the industry know-how to uncover and implement new business models

IBM BRINGS IT ALL TOGETHER FOR COGNITIVE IOT

TECHNOLOGY

IBM technologies are driving innovation and safeguarding organizations worldwide:

750
IBM has more than 750 IoT-related patents—three times more than any other company.

40%
40 percent faster application development with IBM Bluemix® software and IBM Internet of Things Foundation[8]

77,000+
More than 77,000 developers using IBM Watson Developer Cloud services

8,000
8,000 new Bluemix platform users a week

26 billion
26 billion inquires daily to The Weather Company platform for cloud-based services

10,000
10,000 clients rely on IBM Security solutions to manage more than 15 billion events a day.

EXPERIENCE

Around the globe, IBM and our more than 1,400 IoT-focused IBM Business Partners are serving 4,000 IBM clients across all major industries using IBM IoT solutions:

8 of 10
8 of the 10 largest oil and gas companies[9]

6 of 10
6 of the 10 largest energy companies[10]

11 of 20
11 of the 20 largest diversified utility companies[11]

7 of 10
7 of the 10 largest automotive companies[12]

9 of 15
9 of the 15 busiest airports[13]

11 of 12
11 of the 12 major aerospace and defense companies[14]

MOMENTUM

As cognitive IoT continues to redefine the possible, IBM will lead the way:

350+
More than 350 Watson ecosystem Business Partners

24+
More than two dozen Watson APIs, including four specifically designed to accelerate cognitive IoT, powered by 50 different cognitive technologies

250
More than 250 global professionals offering services in IoT integration, analytics, big data, platform architecture and strategy consulting

2,000
The industry's first consulting practice dedicated to cognitive business, drawing on 2,000 experts in industry dynamics, data science and analytics[15]

1.3 billion
1.3 billion Watson API calls a month on average, and growing

25
Watson clients in 25 countries, spanning 20 industries

Prepare your organization to thrive in the cognitive era

Find out more about Watson IoT by visiting

ibm.com/iot

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FOOTNOTES

[1, 2, 9–14] IBM Research

[3, 4, 5] IDC, Worldwide Internet of Things Forecast, 2015-2020, Doc #256397, May 2015.

[6] Business Insider, "The 'Internet of Things' will be the world's most massive device market and save companies billions of dollars," John Greenough, April 14, 2015.

[7] IDC, "Internet of Things: New Worldwide Demand Side Research on Perceptions and Plans for Adoption 2015," September 10, 2015, http://www.idc.com/getdoc.jsp?containerId=IDC_P33002

[8] IBM case study, http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=AB&infotype=PM&appname=CLDE_MS_MS_USEN&htmlfid=MSC03009USEN&attachment=MSC03009USEN.PDF

[15] IBM, "IBM Launches Industry's First Consulting Practice Dedicated to Cognitive Business," press release, October 6, 2015