



# IoT SMART REVOLUTION: Expand your senses into an immersive world

The smart world is one that you're part of. One you talk with and listen to, and share visual space with. One you're immersed in.

Your intelligence flows effortlessly through gateways and into clouds, as you minutely control your environment. At home, at work, travelling – you're at the centre of a new ecosystem of personalized machines. Human Machine Interface (HMI) solutions stretch across voice, audio, video (with video analytics) and touch. It's a new, intuitive, sensory world.

## A NEW LEVEL OF CONNECTION IS HERE



Machines are **learning** to interact with us, extending our capabilities and our understanding as never before. Everything is **designed to help** us do more, more and more easily.

## SEARCHING FOR A VOICE

## FROM INTERFACE TO RELATIONSHIP

Connecting to the information world used to be just for techies. Then it was doable, but difficult. It became easier, more portable – but always a little unnatural.

Now, with **voice control** and machines that know your location and have learned your needs and preferences, all barriers are removed. Connecting is as simple as **talking to a friend**.

That means **everything has changed**. Not only is it **simple and intuitive** to access everything IoT brings, it's also very habit-forming – in a very good sense. Managing a busy, efficient and fun-filled life takes ever less effort and time.

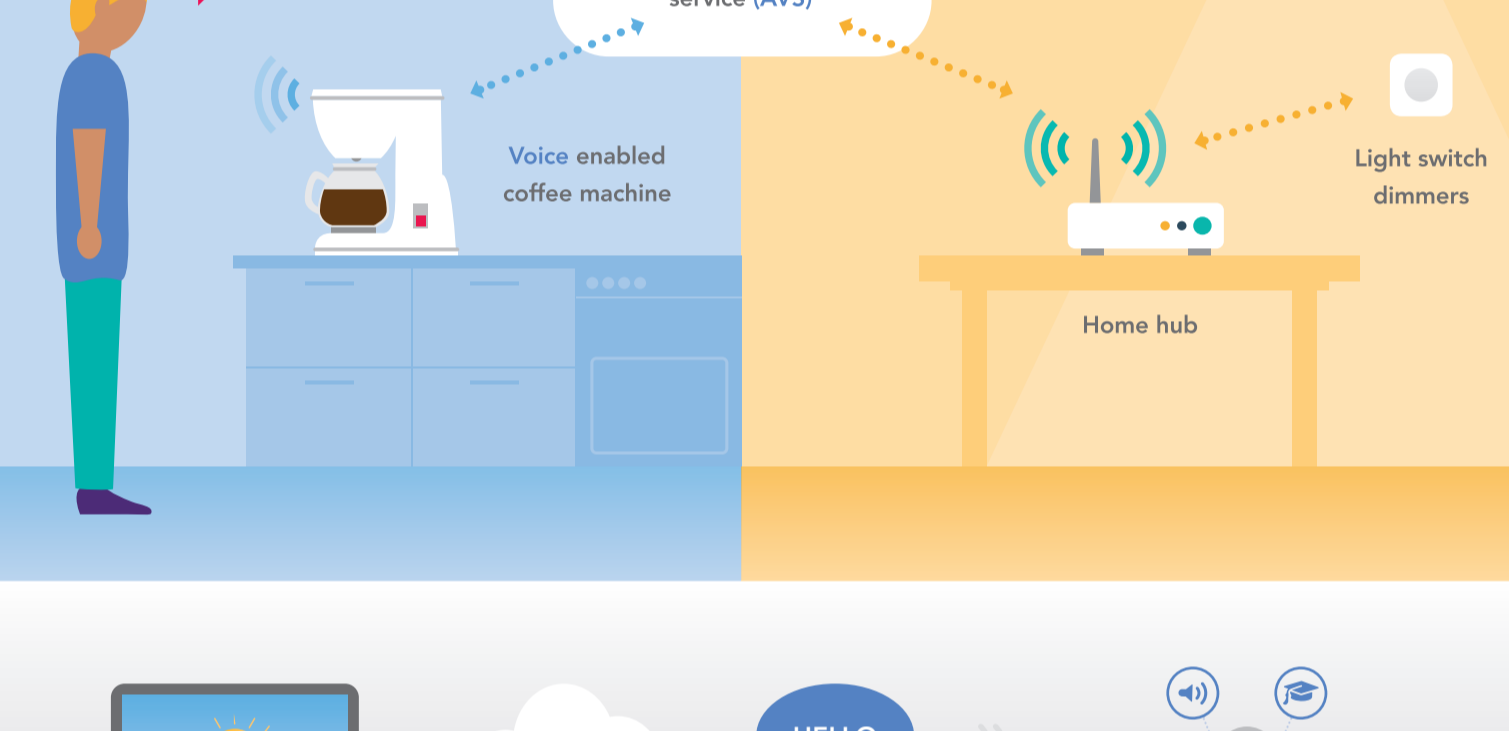
The future is **personalized support**...

...from machines that seem part of our **senses**.

## THE WORD IS OUT

As voice becomes embedded across the **smart home** (and eventually, the smart city), all kinds of appliances will connect you to network or cloud. **At your command**.

### EVERY DEVICE CAN BECOME A GATEWAY



**MACHINE LEARNING AND AI** are making responses faster and more reliable and further driving the revolution



**THE FAST SPREAD OF IOT** and interconnectivity demands a new world of seamless machine interfaces – which is exactly what voice delivers



**MORE AND MORE MANUFACTURERS** are adding voice controls to home appliances. Voice control becomes standard as all major players drive consumer adoption



**THE SMART ECOSYSTEM** expands daily, accelerating uptake

## HOW VOICE-BASED IoT UPTAKE ACCELERATES

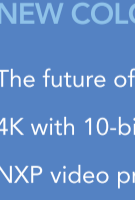
Imagine you have a friend who always listens, knows your habits and preferences and is always ready to help and make life easier. With **machine learning/AI**, you have exactly that. Interacting with machines is as **natural** as using your senses.

This is a **friend** you would recommend to others, too. The network effect soon takes over. Word spreads!



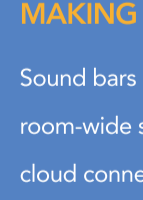
## VOICE IS CENTRAL TO THE NEW SENSORY ECOSYSTEM

Video and audio are **changing fast**. TV is breaking from broadcast/cable in favour of internet streaming and apps. Audio is **delivered** by streaming services. Voice control sits at the center of this **immersive** IoT experience – the perfect interface for the new **always-on, multiply-connected** paradigm.



**NEW COLOUR, NEW DEPTH... NEW PRESENCE**  
The future of video is greatly enhanced clarity, with streaming 4K with 10-bit color and High Dynamic Range (HDR). NXP video products embrace all 3 new standards:

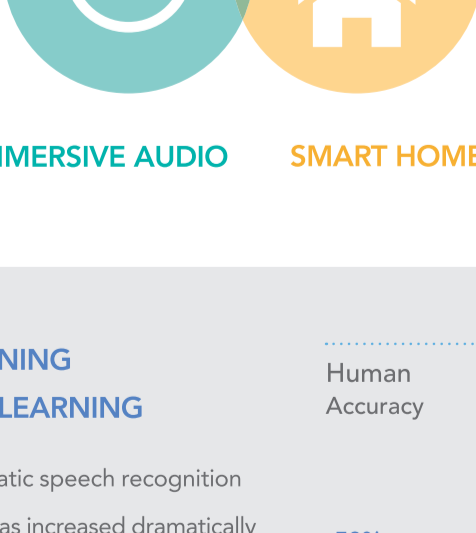
- ✓ Dolby Vision
- ✓ HDR10 (Blu-ray group)
- ✓ Hybrid Log Gamma



**MAKING THE RIGHT SOUNDS**  
Sound bars are natural voice interfaces, capable of room-wide speech capture with local control or cloud connection for wider assistant functions.

- ✓ Networked with WiFi and/or Bluetooth
- ✓ Immersive surround audio and multi-room capability
- ✓ High quality of Dolby Atmos or DTS-X.
- ✓ Designed to be voice controlled
- ✓ Always-on, always listening – core to the IoT ecosystem

### STREAMING AUDIO



### SAY 'HELLO' TO THE IoT

Working with leading sector specialists, NXP delivers targeted build solutions across the **voice-audio-visual** ecosystem with voice control tying everything together.

- 🗣️ **Natural speech** interface from anywhere in a room (far field capture)
- 🏠 **Local control** of selected functions
- ☁️ **Cloud interface** for assistant functions

### LISTENING AND LEARNING

Automatic speech recognition (ASR) has increased dramatically and now exceeds human accuracy. The inflexion point is passed. Increasingly we **talk, not type**.



## JOINING THE BIG CONVERSATION

NXP is working with the major players in the voice space. All are committed to fast time-to-market and rapid development of **voice controlled IoT devices** and gateways.

IT'S GOOD TO TALK...

NXP is at the forefront of the IoT revolution, a trusted technology partner offering leading solutions across the smart ecosphere. From home appliances to citywide transport, we have the knowledge and the cutting-edge experience to maximise results.

The barriers between people and machines are dissolving. Interacting with the automated environment is now an **immersive sensory experience**. And NXP is making this new lifestyle experience seamless and fulfilling.

