

## Media Backgrounder

### Philips' connected lighting system for Offices

Putting you at the center of an illuminated, adaptive workspace environment

The lighting industry is going through a fundamental change with the transition to LED-based, digital lighting. Light points can now be connected to each other and to monitoring and management systems; data can be transmitted through light. We also live in a time that is marked by constant connectivity. These trends are changing the way people use and interact with light.

Connected lighting extends the role of a building's lighting infrastructure to serve not only for illumination, but also as a pathway for information and data. Philips' connected lighting enables people to connect — to each other; to the spaces they work and live in, that they can personalize according to their preferences; and to information that is relevant to them in a particular location. Light can be personalized according to individual preferences. Light can be delivered only where and when it's needed.

With connected lighting, building owners and facility managers can now monitor and manage a building's lighting and other important services, such as HVAC, through a single integrated system, allowing them to simplify their business processes, optimize energy efficiency, and give the people who use the building new levels of comfort and control over their environments.

### Using the omnipresent nature of lighting infrastructure

Philips' new connected lighting system for offices exploits the omnipresent nature of lighting infrastructure to gather information about how a space is being used, and to provide information and services to the people using it.

Indoors, lighting is present throughout a building. Philips' new connected lighting system makes in-context intelligence and services available throughout office spaces by outfitting LED luminaires with intelligent devices — such as locator beacons, sensors, and transmitters built into the luminaires' housing — and connecting them to intelligent monitoring and management systems.

"If you're creating a new building or renovating an existing one, you will install lighting — that's given," says Jeff Cassis, Head of Global Systems at Philips Lighting. And if you want to create a system that provides services based on knowing exactly where people are, putting connectivity and intelligence in those luminaires makes perfect sense. If each luminaire can uniquely communicate its own position, this provides very fine granularity for capturing data on the scale of data points every few square meters."

Philips' connected lighting system for offices builds on the inherently digital nature of LED lighting technology. As digital devices, LED luminaires contain on-board intelligence very much like a computer's. This means that LED luminaires can be connected together and controlled by software-based applications in exactly the same way that computers are connected together in a network, using standard networking methods and protocols. And also exactly like computers in a network, these intelligent luminaires can be engineered to enable two-way communications with both back-end software tools and apps running on the mobile devices of occupants in a space.

In this way, Philips' connected lighting system can provide valuable data and services to office facility managers to ensure more sustainable and cost-efficient buildings. It also enables personalized lighting and increased comfort.

## **Personalized lighting**

Philips' new connected lighting system for offices enables people to personalize spaces to their unique preferences via apps on their smartphones. The interaction between the smartphone and the lighting is made possible either via wireless communications access points integrated into luminaires' housings, or by means of a proprietary technology that Philips has developed and patented.

The way office space is used has evolved over recent decades. In many places, there has been an evolution from cell offices, to a few people sharing a single office, to open plan. Now even the idea of fixed desks is giving way to new space-sharing concepts such as hoteling and hot-desking, where people book or simply find an available space and use that.

Now, imagine being able to adjust the lighting directly through your smartphone to your preference. You settle at a desk to do some work between meetings and adjust the luminaire overhead to produce the light level you like, with just a tap of an app on your smartphone. You might prefer a high light level to boost your energy, while the person next to you might prefer softer, lower-level light to promote relaxation during a break.

## **Going beyond light alone**

### ***Providing valuable information about how space is being used***

Philips' sophisticated system management software enables building owners to receive comprehensive real-time and historical views of a building's usage and activity, allowing them to optimize energy efficiency while giving office workers a high degree of comfort and control over their environment.

The system derives its power from sophisticated software solutions. These software solutions provide monitoring, visualization, historical analysis, and reporting tools. These tools allow facility managers to understand the occupancy and activity patterns of spaces in order to manage the assignment and usage of resources.

"What we're doing now is developing ways for businesses to gain even more value from intelligent lighting systems," says Jeff Cassis. "Existing luminaires often include sensors to check whether people are present or not. But imagine if the luminaires in an office building could provide fine-grained data on which rooms are being used and at what times. This allows facility managers to plan the usage of the space much more effectively, for instance to selectively lower light levels, reduce heating or cooling, or avoid unnecessary cleaning – which is a major cost for any large building."

This new connected lighting system can also optimize resource usage in offices by combining information about site activity with indoor location-based information. Imagine that your team is at an all-day offsite, and you're occupying a single corner seat by a window. Based on real-time intelligence about the current occupancy and usage of the space, the system automatically lowers the light level on the unoccupied areas of the floor.

Philips' new connected lighting system helps to unlock the full potential of digital lighting by creating applications that add value and that are easy to install and operate for both office owners and occupants. As lighting is increasingly seen as part of a building's IT network, Philips is working with a range of open and industry-standard technologies, as well as with relevant industry partners.

Jeff Cassis adds, "As the world leader in lighting, we have the largest portfolio of LED luminaires, backed up with products and competences at every step of the lighting value chain. Plus, we have developed tools—like software-based dashboards—that provide an intuitive way to set up and operate the system. So we can be a key partner in enabling connected lighting systems that deliver value for our customers, over and above illumination alone."