

## Poster

# Le Cube: designing interactive lighting furniture in modern lighting systems to enhance user experience

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### Introduction

Modern lighting platforms, based on LED technology, consist of numerous, highly dynamic, light sources and embedded sensors that are interconnected and able to communicate. These light sources will be embedded in areas where we live and work and in the objects we use and interact with. The user experiences the resulting lighting. We have developed a living lab, within a break out context, which contains such a lighting platform. We believe the challenges for such modern lighting platforms are threefold. The first challenge arises in the development of valuable applications; in other words, how do we support people through lighting? The second challenge is in the development of platform elements; what “shape” have the “luminaires” that make up the platform, and how do they communicate and work together? Finally there is a challenge in user-system interaction; how will people communicate their wishes and intentions with the system?

### Design of Le Cube

Le Cube is a piece of lighting furniture that aims to address the above challenges through design. Le Cube was specifically designed to improve user experience in breakout contexts at modern offices. It resulted as a tangible light cube and as an adaptive platform that transforms a regular-small coffee table into an ambient lighting element. Le Cube is able to connect with

other lighting nodes of the breakout area and as such seamlessly fits in and collaborates with the lighting platform. This makes it possible to change the atmosphere of the room instantly, enabling the people in the room to relax from work, to be inspired for creativity or to connect with each other. The design process of Le Cube contributes to an understanding of how new lighting experiences are potentially packed into everyday furniture.

### Discussion

Users appreciate the possibility to run different applications on such an object so they can choose an appropriate one for their preferential contexts. The interactive object attracts attention and connects people within the room. Yet Le Cube is more than an attractive eye catcher for end-users. As an active platform element, Le Cube contributes to the breakout room as a smart space. Le Cube can be used as a natural and tangible object to interact and control different lighting settings in the room. Moreover, it promotes and enhances the opportunities a platform offers. Developers can easily generate new functionalities or applications in the table or include the properties of the table into other apps that run on the platform. Concluding, Le Cube is a supportive element to enhance specific breakout experiences and also opens a new design space in interior lighting design on experience design and interaction design.



*Fig. Le Cube sample applications: campfire, interactive blob, random blob and rainbow*