Sleep well and wake up feeling rested, enhance your guest experience with circadian lighting

Sleep and wellness is the core business for hotels.
OBSERVATION: When we travel sleep is disrupted:

- 93% of international travellers have jetlag
- 51% of business travellers want <u>better</u> sleep
- 4 out of 5 wellness tourists add activities for better sleep and it grows faster than overall global tourism. (source: SRI institute from 2014)

VALUE PROPOSITON
Circadian rhythm lighting increases wellbeing and enhances the guest-experience in a natural way.
LuxBalance researched circadian lighting for hotel guest-rooms and high-end residences. The proprietary technology and algorithms mimic sunset and sunrise to help your guests to sleep well and wake-up feeling rested. We are convinced it could help you to attract new business travelers and wellness travelers, it could increase guest-loyalty, Rev-PAR and allows for in-room differentiation with technology based on e.g. guest-loyalty status.

Follow the gradual sunrise and sunset in all of its dynamics (color, brightness, movement, etc.) over a 20 minute period. When the light turns on, you won't see it, but your body will notice it and get ready for a gradual wake up.
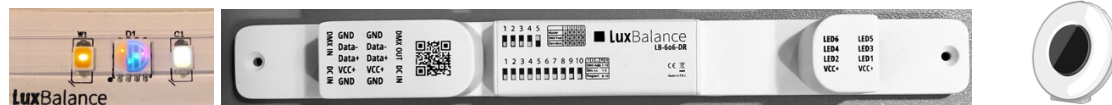
6 custom LEDs to mix into one color, a lighting driver, a wake-up light and alarm clock as UI.

LIGHT & SLEEP
Hospitality is about caring for people and a transformation as well. e.g. when guests leave, they feel better than when they arrived. Sleep is an essential part of hospitality. Guests would like to sleep well, to fall asleep, stay asleep and to wake up refreshed, so they are ready for the day, Business travelers need sleep for better performance. Wellness travelers aim to balance their body, mind and spirit in a holistic way.

Lighting is the main influencer in the production of melatonin (the hormone that makes us feel sleepy) and cortisol (that hormone that makes us feel awake and alert). The right type of light at the right time can help to make people feel more awake, active, alert, concentrated, relaxed, at ease.

OFFERING LuxBalance™
- **Sunrise-to-Sunset LED for Cove application:** Specially designed for a guest-room it integrates a sleep- and wake-up experience with 6 tailored spectrum LEDs to mimic a

dynamic sunset and sunrise. Together they can produce the right natural brightness, colors and right influence on melatonin and cortisol.

- **Algorithms**: Proprietary lighting algorithms combine lighting aspects (intensity, transition, moment, contrast etc.), with environmental conditions (room dimension, pillow location), for outcomes such as feeling rested, energized. Algorithms can be optimized to match your brand and interior so that you can have your own sleep-signature program.
- **Lighting driver:** With 65,536 control steps it can control everything from brightness, color and many other lighting qualities that impact the experience.
- **Compatibility and digital integration**: Technology is compatible with industry control protocols and user interfaces. We plan to develop and release APIs and SDKs so that wake-up lighting can be combined with e.g. morning-calls or guest loyalty app.

- **Scalable & internationally deployable:** LuxBalance can be deployed world-wide, allowing HSH group to replicate a design concept globally and design for brand consistency.
- **Customization**: High-end projects need perfection to transform vision into reality, e.g. we customize unique LEDs or special lengths for visual appeal and we designed for flexibility.
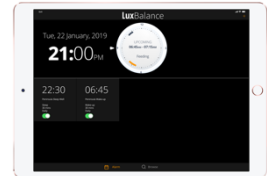
YOUR BENEFITS
Hotel benefits:
- Support guest-loyalty and high RevPAR: you may enhance the guest experience with the use of this unobtrusive and responsive technology. Once invested it is incremental value without further marginal cost. You could design your own sleep-signature program that involves lighting, curtains, fragrance, humidity and more.
- Personalization: You may start to offer this enhanced experience to certain (loyal) guests only. It allows you to differentiate with the same hardware based on context and software.

YOUR GUEST-EXPERIENCE
Mr. Young arrived from an international flight. Slightly jetlagged he arrived at the hotel at 16:00, he joins his dinner appointment and returns in the late evening. In the booking confirmation email he read Peninsula's suggestions to travel well. He uses the in-room sleep timer from LuxBalance which was suggested by Peninsula. He sets his sleep timer at 30 minutes and reads his favorite magazine in bed. While reading, he notices that the light slowly dims and becomes orange/ reddish. Quite sleepy already he puts his magazine away and falls asleep within minutes. In the morning at 7:30 the light slowly turns on while Mr Young is still asleep. He slowly starts to wake and just before the morning call of 08:00 he wakes up feeling refreshed and energized. He sends a quick message to his personal assistant to change his hotel booking for his upcoming trip to Myanmar and stay at Peninsula.

ROADMAP:
LuxBalance system under development (i.e. clock). Prototypes can be set-up to demonstrate the effect.

OUR KALEIDOSCOPE AMBITION
- As a Hong Kong startup we would like to innovate with you and for you; from Hong Kong to the world

- Demonstrate and refine our lighting concept
- With your mentorship define the best way to commercialise our offering: hardware (e.g. ~700USD per room for cove lights only) or subscription (e.g. ~1.5USD per room-night)

NEW in January:
- LuxBalance trademark was awarded and total IP count is 19
- Acclaim lighting (USA) – a world leading architecture and entertainment brand with regional headquarters in Europe and Asia announced its partnership with LuxBalance
- Our technology is used in a tissue-culture lab at Dole Food for plant-centric light
- Our technology is used in a scientific experiment by Hunan university

COMPANY – CO-FOUNDERs
LuxBalance focuses on professional lighting for hospitality since September 2017.
We research and apply new digital lighting concepts to "Bring Light to Life".

Banly Cheung (Hong Kong) and started his first company in 1984. He co-founded NCW Holdings LTD (known as BOTEX) and grew it into a world-leading company and ODM manufacturer in **entertainment and architectural lighting**. NCW was acquired by Philips in 2010 and Banly became **Chief Technology Officer** at Philips Entertainment Lighting in Asia. After a few years he retired and travelled around the world. However, lighting remains his passion and he invested in several lighting startups to light the future.
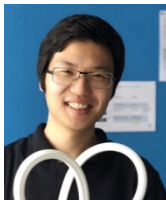
Jille Kuipers (Netherlands) was Innovation Manager at **Philips Research**. He developed an Asia human centric program to support health and **wellbeing with light**. Prior to his innovation role he was pricing officer for professional lighting in Asia and innovation consultant in Singapore. The potential of light fascinates him.

We are a privately held company, with positive cashflow and profit generating. We offer regular (non-human centric) architectural lighting. 2017/ 2018 project references are below:
ASCOTT Singapore:
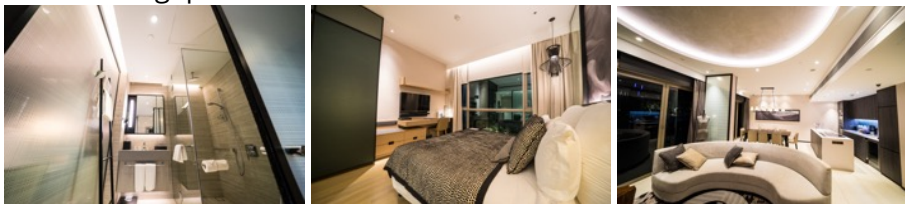
Novotel Singapore, OKURA Philippines, HILTON Philippines: