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Malmö school case:
This HCL installation is an enabler for ICT based business development

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Topics

- *Short presentation of BrainLit*
- *The evolution of light*
- *HCL business areas*
- *New business opportunities*
- *Future development of HCL*

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Short presentation of BrainLit

- *Located in Lund*
- *Started in 2012*
- *Currently 7 person*
- *IP in lighting control*
- *Offer lighting systems with focus on*
  - Reduced sick leave
  - Increased wellness
  - Increased productivity
  - Reduced energy consumption and maintenance
- *Involved in Lindeborgskolan study in Malmö, Sweden*

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Evolution of light

- *Today's light environments have large gaps in many areas*
  - Low intensity combined with a unwanted spectrum and unhealthy flicker
  - High energy and maintenance cost
  - The adjustment of the light for individual activities or persons are non-existent.
  - The impact of these shortcomings, both for the individual and on common basis, is lower productivity, reduced well-being, increased sickness and stress.

- *Evolution of control system*
  - Centrally controlled luminaries
  - De-centralized controlled luminaries
  - "No controlled" luminaries
  - Individual luminaries, HCL

- *Light is transforming from static to dynamic control*
  - On/Off is history

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HCL business area

School

- Light environment has a great impact on the results and performance which was indicated in the Malmö School study.

- A good light environment also stimulates the internal hormonal circadian rhythms, the circadian clock, which helps students to sleep better and to get rested for school. This makes students more receptive to teaching.

- Correct brightness and spectra increases children's learning and concentration.

- Agency reports indicate that 73 percent of schools and 82 percent of health facilities have lights that are in great need of modernization.

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HCL business area

Office, hotel and conference

- The lighting in the office is a strong contributor to a good working environment.

- HCL lighting systems allow office lighting that can be adjusted to the tasks and the individual's needs.

- One challenge is to create a good lighting environment that works for all year. Especially during the darkest months, it is important that the lighting reflects a natural light even without a hint of sunlight.

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HCL business area

Health / Elderly care

- Within the health sector, the light environment is important for a positive and speedy recovery.

- With a HCL system creates an environment that ensures well-being and development.

- You can create a HCL lighting system that mimics daylight, making a good working environment for the night staff that increases productivity and well-being.

- With a HCL system that impacts the circadian cycle, the lighting system will stimulate elderly alertness during the day, which in turn increases the quality of sleep.

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HCL business area

Animal care

- The lighting in livestock housing is important for the animal's well-being and create the right conditions for better product quality.

- Good lighting shows great impact with milk production of cows.

- Moreover, the right wavelength increases animal wel-being is reflected in the quality of the product.

- Lighting should support the animals' circadian and behavioral needs, but also fulfills an important role in creating a good environment for the animal keeper and staff.

- An investment in a dynamic HCL system, based on the latest lighting research on the impact of light, will reduce the cost of electricity for a long time to come.

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New HCL business opportunities

- *ICT Health Light integrators*
  - Need to have access over existing network protocol
  - No high cost on heavy electrical installation

- *Renaissance of light therapy (Light Mood)*
  - Traditional light therapy has been used but outcome has been uncertain
  - With HCL and focus on the circadian system new business will emerge

- *Light as design but also as a function*
  - Luminaries have been used as a design element
  - With HCL you can offer a solution that will have also impact in people health and productivity

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New HCL business opportunities

- *Improved efficiency of luminaries allow Light over PoE+*
  - Large interest from big players like Cisco

- *Need for HCL integrators*
  - Extended network technician
  - Future light installation can be done by IT personal

- *Light operators*
  - As telecom business, users will have their own preferred light scenes

- *Smart Sensor*
  - Improved sensor to control environment that affect us. (Spectrum sensors)
  - IoT and cloud services will be used to collect data for better user experiance

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Thanks for listening!