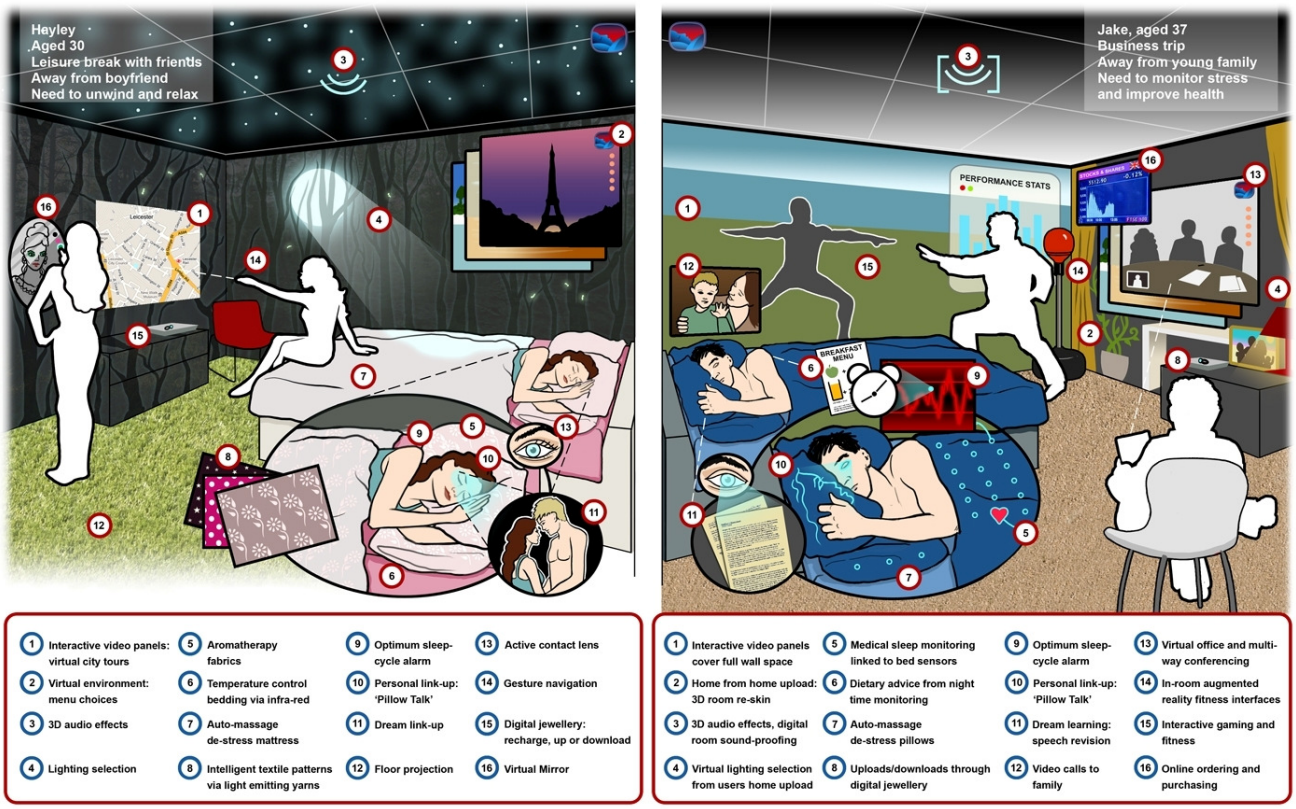

THE FUTURE OF SLEEP: VIRTUAL REALITY TO REVOLUTIONISE OUR SLUMBER

Interactive dreaming, virtual love-making, sleep studying and health monitoring are set to transform how we will be sleeping in the future according to a new report published today.

The 'Travelodge Future of Sleep' study, carried out by award-winning futurologist Ian Pearson, has investigated the impact of new technology on sleep and how the hotel room of the future will respond to this 'sleep revolution' in 2030.

Within the next two decades, the hotel room will be so technologically advanced that it will almost be alive – fulfilling guests' needs like a personal concierge, lifestyle coach, fitness trainer, psychologist and doctor. Cutting-edge technology will monitor customers' energy levels, physical well-being, emotions and mood to help ensure they achieve a good night's sleep.

The Sleep Revolution

Key findings from the study revealed that by 2030, a good night's sleep will provide recreation, training and medical monitoring, as well as rest and rejuvenation. Listed below are the various ways in which bedtime will be revolutionised in the future:

- By 2030 we will be able to manage the contents of our dreams as in the movie '*Inception*'. Video, audio, smells and tactile experiences produced using our bed or bed linen will play a key role in helping to make our dreams feel real. We will be able to replay our favourite dream from a menu just like choosing a movie. Also, we will be link into dreams with our partner or family and friends and enjoy a shared dream experience.
- The dream management system will also act as a coach, offering the opportunity to study or even learn a new language whilst asleep.
- Remote virtual love making will be possible by 2030, allowing individuals to connect with their partner whilst away from home. Couples will also be able to benefit from the ability to link peripheral nervous systems via active skin electronics together for enhanced love making. This will enable both individuals to experience each other's feelings and emotions. Also, by wearing active lenses to change the image delivered to their retinas, individuals will be able to adjust how their partner looks whilst making love. This will enable people to change the image of their partner on a regular basis, and only they will be aware as their lover will not be able to tell what they are looking at.
- By 2030 it will be possible to diagnose some medical conditions by monitoring sleep patterns. Sleepwear featuring electro-responsive fabrics will enable measurement of skin conductivity (indicating stress or relaxation states), pulse, blood pressure and quality of heart signals.
- Active contact lenses will allow sleepers in the future to watch TV, watch movies or check emails as they fall asleep. The lenses will be worn under the eyelids and deliver high quality 3D images directly onto the retina.
- Sleepwear of the future will feature electronically controllable properties which can gently massage sleepers or play active roles in dreams, linking with imagery and sounds to create a fully tactile dreamscape.
- Sleep-cycle alarms will monitor the electrical activity in the brain and identify the best time for the sleeper to wake up – ensuring their sleep cycle is completed.

Futurologist Ian Pearson said: "On average we spend a third of our lives asleep and this will still be the case in 2030. Technology will not change our basic need to slumber but it will certainly enhance the experience, enabling sleep to have much greater value than merely rest and recuperation.

The Hotel Room of the Future

When guests need to stay in hotels in 2030, they will still want a good night's sleep in comfortable surroundings. The key difference is that the experience will be personalised to their individual needs and taste via virtually invisible technology. This technology will monitor and anticipate physical, emotional and mental needs and desires for a healthier and happier state of being.

Almost any surface or fabric in the 2030 hotel room will be capable of electronic enhancement, whether it is scent production, acting as a visual display or speaker, or as a source of ambient sound. Listed below are key feature of a hotel room in 2030:

- Augmented reality will enable the entire surface of the hotel walls and furniture to be used as any kind of display, e.g. painting, computer screen, TV screen, a virtual game or a fantasy location such a tropical beach, forest or favourite city.
- Lonely guests will be able to upload virtual family images or impose their own room, by uploading a picture of their home bedroom - making them feel like they are at home.
- Atmospheric temperature control air conditioning will allow guests to alter their room climate so they stimulate the ambience of a seaside, forest or being surrounded by mountains.
- Outdoor sounds from flat panel audio built into the window will bring in the sound of the ocean, or a forest, to accompany their fantasy room view.
- Soft surfaces such as fabrics will interact in tactile ways to produce scents, change colours and pick up signals from the skin. Guests will be able to instantly change the colour, pattern and texture of their room furnishings.
- Guests will be able to attend a local theatrical production, explore some local tourist attractions or just wander through town, all remotely from the comfort of their room. They would be able to do any time regardless of the actual time or weather.
- Guests will be able to shop from the room, with the walls replicating the interior of a shop. In the same way guests could enter into the world of

computer games and play the actual character – within the dimensions of their room. Individuals would be able to link up with other guests and play virtual reality games between rooms.

- Electronic mirrors in 2030 will offer guests 360 degree views and women will be able to view different make-up looks and hair styles before application.

Futurologist Ian Pearson said: "Hotels in 2030 will offer customers a bespoke room and experience on every visit. Lonely business travellers will be able to turn their hotel room into their bedroom at home and with augmented and virtual reality, they can share the experience with their partner anywhere in the world. Leisure travellers will be able to bring their favourite sights, sounds and smells into their hotel room for the ultimate stay."

Leigh McCarron, Travelodge Sleep Director said: "We are currently living in an increasingly tired society, Every year we are getting less sleep on average per night and sleep deprivation is a growing concern for many Britons. In light of these rising issues we thought it would be a valuable insight to investigate how we will be sleeping in the future. It was interesting to see that despite sophisticated technology enhancing our lifestyle in 2030; our basic need for a good night's sleep will remain crucial for good physical mental and emotional health."

To help illustrate how a future hotel room will look in the future, Travelodge has created a room image – The 'Sleepstimulator'.

Key to illustration of the SLEEPSTIMULATOR

(N.B these ideas are based on technologies all under development)

1. **Interactive video panels cover full wall space**
   In 2025, augmented reality – the use of computer imagery overlaid on the field of view to augment the reality that the guest sees – will enable the entire surface of the hotel walls and furniture to be used an interactive display
2. **Home from home upload: 3D room re-skin**
   Guests will be able to choose from a range of layouts and lonely business travellers will be able to display virtual family images
3. **3D audio effects, digital room soundproofing**
   A flat audio panel will enable guests to choose from a range of ambient sounds, such as the sound of the ocean to help them drift asleep
4. **Virtual lighting selection from users' home upload**
   Atmospheric lighting will stimulate the ambience of being at home
5. **Medical sleep monitoring**

Sleepwear featuring electro-responsive fabrics and microphones will enable measurement of skin conductivity (indicating stress or relaxation states), pulse, blood pressure and heart rate

6. Dietary advice from night time monitoring

Nutritional advice will be relayed following monitoring

7. Auto-massage de-stress pillows

A gentle head and neck massage will help guests drift off to sleep

8. Uploads/downloads through digital jewellery

By 2035 mobile phones will be extinct and tiny items of digital jewellery will service all guests' mobile and IT requirements

9. Optimum sleep-cycle alarm

Sleep-cycle alarms will monitor the electrical activity in the brain and identify the best time to wake the guest – so that he/she wakes up feeling fresher than if they had awoken just a few minutes into a new sleep cycle

10. Personal link-up: 'Pillow Talk'

The 2035 pillow will house a range of soft electronics to detect brain, REM and sleep activity, as well as miniature microphones to enable solo travellers to chat with their family back home

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12. Video calls to family

Video calls will link guests with their family and friends back home

13. Virtual office and multi-way conferencing

Virtual technology will enable business travellers to their hotel room into a working office, with walls becoming video monitors with webcam capability

14. In-room augmented reality fitness interface

Cyberspace will play a huge role in the 2035 hotel room, where guests can enjoy a work-out session with a virtual personal trainer

15. Interactive gaming and fitness

Guests can also invite digital creatures of characters from movies and games to share their room with them

16. Online ordering and purchasing

Guests will be able to shop from their room, with the walls replicating the interior of a shop, or check out stocks and shares prices via web on the wall

Ends-

Editor's Notes

About Ian Pearson, author of the 'Travelodge Future of Sleep' study (available at www.travelodge.com)

Futurologist Ian Pearson is a Maths and Physics graduate and has worked in numerous branches of engineering, from aeronautics to cybernetics, sustainable transport to electronic cosmetics. His inventions include text messaging and the active contact lens. He was BT's full-time futurologist from 1991 to 2007 and now writes, lectures and consults globally on all aspects of the technology-driven future. He is a Chartered Fellow of the British Computer Society, the World Academy of Art and Science, the Royal Society of Arts, the Institute of Nanotechnology and the World Innovation Foundation. In 2007 he was awarded a Doctor of Science degree by the University of Westminster. He was recently awarded an Award for Excellence by the US Army.