

Know Your 'Omics' for the Coming Merger of Hotel Tech and Welltech

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When most of us are primed with the term 'hotel technology', we conjure thoughts of the PMS, guest profile data, inventory distribution, cabling infrastructure, energy management, credit card processing, cybersecurity and the like. But as more and more brands start to integrate advanced wellness practices into their spas or rooms to drive guest satisfaction, longer LOS and total revenue, hoteliers and IT professionals would be wise to have a cursory understanding of the vast world of technologies that are helping evolve and expand the footprint of wellness at hotels.



We caution this not as a recommendation to go out and study medicine for four years, but in order to better see this secular trend as it's unfolding and so that you know how to best align your own property

or brand's hotel technology in order to make any advanced wellness programming an unbridled success. The biological sciences come with their own jargon and alphabet soup much like hotel tech, after all, and if you are struggling to grasp the terminology or interpret the results from some new landmark research paper, then it becomes all the harder to seize the opportunity for your own brand's growth.

This megatrend we speak of is, of course, wellness, where within this broad, ambiguous word is the implication that people all over the world are discovering (and rediscovering) healthy lifestyle practices so that they can live their days with more vitality, heightened cognition, less sickness and better moods. Over the past two decades, the advent of 'welltech' has entered this zeitgeist, introducing a plethora of health-promoting machinery and diagnostic tools that all the leading hotel spas have already deployed or have investigated deploying.

But the real catalyst over the next decade for the continued growth of wellness practices and welltech acceptance stems from the discovery of the epigenome which to this day is rewriting everything we know about how our bodies work and is influencing the way people think about their lifestyle choices.

Some Background on the Omes

This word 'epigenome' may be unfamiliar to you, but it's unlikely that 'genome' is. This latter term was introduced just over a century ago as a portmanteau of 'gene' from the Greek root for 'creation' or 'trait' and 'ome' which for our purposes comes from the Greek for 'body' or 'collection'. With 'epi' meaning 'above', epigenome thus translates to 'the collection of elements that are on top of a person's body of traits'. In other words, the epigenome comprises those substances in every cell of our body that attach to our DNA and influence which genes are expressed or not expressed.

What's groundbreaking with the recent research into the epigenome – and by 'recent' we mean roughly over the past 15 years – is that while a person's genome is determined at birth and set for life, the epigenome is malleable to changes that reflect environmental and lifestyle factors. The analogy we like to use here is that if your genetics is a switchboard then your epigenetics is the switchboard operator.

The next earthshattering development was in discovering that epigenome changes within specific organs can influence disease progression and the directionality of tissue aging while certain population-level epigenetic patterns correlate with one's chronological age (read: Horvath Clock). Combining these breakthroughs with the latest million-dollar equipment that can detect individual atoms – as well as the internet that allows researchers to coordinate across continents and a ton of machine learning – and today we can measure 'epigenetic biomarker proxies' in order to estimate someone's 'biological age' or how old their bodies actually are compared to their physical time on this planet.

All this has led to an explosion of medical research as scientists tease out the nuances of how life works and how to help people with better treatments or early detection of various ailments. Starting with genomics and epigenomics – or the study of the genome and epigenome respectively – we now have a variety of 'omes' and 'omics' as these subjects becoming increasingly specialized:

- Chromosomics: modeling the elements that constitute the architecture of a chromosomes
- Transcriptomics: studying the entirety of RNA transcripts produced by activated genes
- Proteomics: studying the entirety of proteins in one's body and how their functions change
- Metabolomics: examining all the metabolites or byproduct molecules and how they interact

- Secretomics: examining all the body's secreted molecules or hormones and how they interact
- Connectomics: mapping the trillions of connections amongst the brain's neurons and other cells
- Interactomics: looking at how RNA, proteins, metabolites, hormones, drugs and others interact
- Spatial-omics: looking at how all the various molecules interact in 3D space over time

If that isn't enough 'whoa' for you, consider a series of recent connectome studies where they now estimate the human brain has 80 billion neurons and over 80 billion support cells, identifying over 3000 different types of specialized cells and with geometric complexity of branched connectivity. That's where we are now in the research, and the best is yet to come.

But What Does This Have to Do with Hotels?

We aren't expecting you to memorize the above terms, although any one of these can easily lead you down a multi-hour Wikipedia rabbit hole. Rather, know that all this has only happened in the past two decades. We listed these terms off to show you just how far this rabbit hole now goes, and the rodents are only digging faster and faster.

That is to say, all over the globe doctors and scientists – our proverbial rabbits – continue to work ceaselessly to decipher the hidden mechanisms of biological systems and evolution in order to find new treatments, formulate better diagnostics and deduce those habits that will improve the lives of every human being. With each study or scientific invention being cumulative – that is, building off of what's come before – we now have access to technologies that let us test hypotheses at lightning speed relative to only a few years ago. Hence, it isn't unreasonable to expect the pace of medical discovery to hasten in the decade ahead.

Where hotels can play in all this is in embracing and encouraging lifestyle changes for the better. Researchers continue to test how factors like nutrition, intermittent fasting, exercise, sleep, mental health and specific stimuli like red light therapy (RLT) can influence a person's epigenome, with the pursuit of attenuating certain hallmarks of aging and disease progression. With each new study that's published, it is adding to the vast body of evidence pointing to some habits as being health-promoting and others as being health-disrupting. And then, with each new study or metanalysis (a study of other studies), that information trickles into the newspapers, literature and onto the airwaves for us to consume and adjust our lifestyles accordingly.

As the recent explosion of the wellness industry has indicated, people of all walks are starting to understand that lifestyle equals life outcome and that welltech can help to ensure one is as healthy as possible. This 'welltech' can mean the aforementioned RLT devices that have now been shown to stimulate the dermis layers of the skin and release subcutaneous melatonin (the molecule of sleep and a powerful antioxidant). Welltech can also mean other sensorial activations like massage guns, compression boots that promote lymphatic drainage to improve the immune system, soundscapes, meditation apps or binaural beats to promote certain types of thought patterns.

Then for diagnostics, welltech can imply sending your guests an epigenome test kit so that a clinician or wellness practitioner can interpret the results in order to offer personalized meal plans and supplements once the guests are on premises. Or you may give guests DEXA scans to indicate muscle imbalances for a precise exercise program. Together, this is an immense field with a bevy of technologies worth exploring.

The Intersection of Hotel Tech and Welltech

Yes, some hotels will always be heads in beds, with wellness not even in consideration. But the metrics behind this megatrend are blatantly signaling that travelers are now prioritizing their health while abroad. We see this in the growth of sleep tourism and the wellness retreats industry. We see this in chefs reinventing their menus with ever-healthier options. We see this at the luxury end with traditional spas morphing into antiaging clinics that offer all of the aforementioned welltech and plenty more.

Ultimately, whatever welltech and advanced wellness programming your teams recommend, purchase or install must have a seamless integration with the systems that serve and connect the hotel. For instance, what good is that fancy new cryochamber if your guests can't book it online, your digital signage isn't talking about it, your staffing software can't effectively schedule in the practitioners trained to operate the machine and your marketing team can't incorporate spa vouchers into their packages?

Next, consider the CRM and how merging various databases such as the PMS, spa and F&B POS can inform which guest types would be most likely to reserve a wellness-oriented offer. This not only gives you a clearer path for targeted marketing but also when we talk about lifestyle habits this explicitly suggests multiple occasions over a longer stretch of time. That is, in order to experience the full benefits of joining a yoga class while at a resort, using a welltech device or going through a multi-day sleep restoration program, it's best if the guests return every so often for a tune up.

Whether it's through automations, distribution support, building lookalike audiences and other factors, hotel technology is critical to enable all these welltech activations and maximize wellness revenues. And as the TAM for hotel wellness continues to grow, it behooves all IT teams to understand a bit more about how welltech works in order to envision then predict what the requirements are for the systems that will act as the engine for this vertical.

In this sense, thinking about all the new omes and omics that have emerged is one way to humble the mind and to think long-term about where medicine and, soon after, guest demands are headed. A decade ago, the word epigenome was only mentioned in niche medical laboratories; now, the word is casually tossed around in gossip magazines alongside others like biohacking, adaptogens and nootropics. Over the grand scheme of things, this is a 50-year merger of hospital and hospitality that is still in its infancy, and the hotel brands that will reap the rewards will be led by those IT professionals who have a working knowledge of both sides of this union.