HYPERWELLBEING

FUTURE OF MOBILE & WEARABLES SUMMIT 2016

New Health, Wellness & Optimal Living Economy Manifesto - Draft Version 1.1

"I believe Lee's Hyper Wellbeing vision is as profound and prophetic as, say, those offered in the 1960s with the rise of cyberspace and hypertext."
- Martin Geddes

I've spent the past five or so years in wide-ranging contemplation and research. This was a luxury I kindly afforded myself. Attached are 29 informally stated bullet points summarizing my insights during the last 15 months. These should be read in order without skipping.

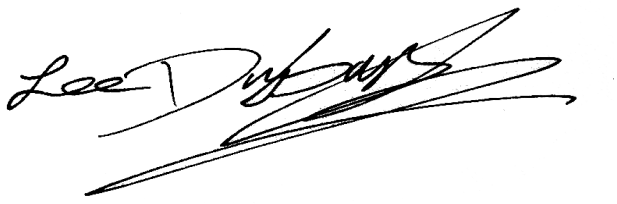
I started out with the belief that we need to strive beyond innovation for the sake of innovation. Instead we need more purposeful innovation; innovation that intends to make a net positive life difference. We may now be at a critical juncture where we need to make a more conscious choice about the role of technology. I believe the role of technology and innovation should be the advancement of wellbeing.

I ended up concluding that a third-computing revolution is underway and that it has the potential to help us stop getting sick over the course of a lifetime; to move "healthy" people towards psychological flourishing and optimal health; and in the longer-term facilitate optimal living.

I also concluded that a new industry battleground is unfolding in the form of a health, wellness and optimal living economy, analogous to the emergence of the "digital economy"; that mobile and wearables share a joint destiny; that mobile is a mature industry in it's current "minutes, messages and megabytes" format yet has high-growth potential relative to the degree to which it manages to align with this new economy.

I'm now putting together a labor of love boutique event and community to explore these insights and ideas. A total of 65 public and 100 private (by invitation) tickets are available. You may check public ticket availability status at http://hyperwellbeing.com/2016/tickets

I very much welcome your feedback. Please circulate.



(Lee S Dryburgh, July 29, 2016, lee@dryburgh.com)

Technology

1. Technology innovation the past two decades has had negligible impact on wellbeing [1].

2. Computing in the form of mobile, wearables and sensors is coming closer to and integrating with the human being. It's becoming an extension of our physicality - ushering in the "third computing revolution".

3. Machine intelligence will rise rapidly over the coming decade and will fundamentally alter how we relate to each other and to our socio-cultural environment in ways we can not predict today.

Global Health

4. Diseases driven by lifestyle are now the leading global cause of death (formerly it was bacteria and viruses). Non-communicable diseases (the four main being cardiovascular diseases, cancers, diabetes and chronic lung diseases) accounted for 68% of global deaths in 2012 [2]. This was up from 63% in 2008, which itself was up from 60% in 2000.

5. In California 55% of all adults have prediabetes or diabetes [3]. Diabetes has almost quadrupled since 1980, affecting 8.5% of adults worldwide [4]. Yet "diabetes is the kind of disease you can see coming from miles away" [5].

6. Only 2.7 percent of the U.S. adult population has a basic healthy lifestyle [6][7].

Healthcare Industry

7. It is largely reactive and passive in that it waits for us to get sick first. Thus it gets dubbed "sick care".

8. It has non-alignment of interests owing to fragmentation into patients, providers and payers. For example payers (the insurer or employer) have little interest in lifetime (or even three or four years) preventative focus as benefits would likely accrue to a competitor.

9. It has many structural incentives that are not aligned with long term health of individuals. For example the provider is often incentivized to do as much work as possible and subsequently bill the insurer as much as possible and the insurer is incentivized to pay more claims.

10. The US healthcare industry costs 18% of GDP ($2.9 trillion annually) with 88% of it being spent on preventable diseases; it's predicted to soar to 21% of GDP by 2021.

11. Public health won major achievements (control of infectious diseases, vaccines etc.) during the 20th century. Today however our most pressing health issues are caused by the lifelong, daily interaction among our genetics, environment, and lifestyle choices - a dynamic interplay of biology, our environment, our psychology and our behavior, interwoven.

Mobile & Wearable Computing Industry

12. "Mobile" in its current format is a mature industry. The "minutes, messages and megabytes" is no longer sufficiently valuable to be a core driver of future industry growth.

13. The future of mobile and wearables is inseparable; they share a joint destiny.

14. The number of peripherals and wearables that can use the smartphone as a central connectivity and processing hub will keep increasing. The majority of these peripherals and wearable devices will be for the purposes of health and wellness.

15. The "third generation" telephone (~ Android/iOS) relocated telephony and messaging to the position of just being "apps" on a "pocket computer". It also made mobile multi-sensor (rather than just a single sensor, the microphone). The "fourth generation" will consist of a "telephone" as hub, plus wearables and sensors distributed across the body. Calls and messaging will be hardware agnostic, allowing them to move onto wearables without the need for a smartphone.

16. We are being ever more "intimately known" as computing in the form of mobile and wearables moves closer to our bodies and our lives; giving meteoric rise to "intimate data". For example our physical and even sexual activities; motion and gestures; sleep and reproductive cycles; stress and energy levels; nutritional intake; and ever increasing physiological measurements. More recently our emotions and the meaning of our conversations.

17. The intimate data derived from the unfolding third-computing revolution will be strongly complemented by a sharp increase in “intimate data” from private laboratory testing; chiefly our genetic and microbiome sequences.

New Health, Wellness & Optimal Living Economy

18. Over the coming decade intimate data (see Mobile & Wearable Computing Industry) coupled with developments in data science and machine intelligence is likely to have a larger impact on health than any new drug, device or procedure. Of the devices that do have an impact, it is likely to be the smartphone.

19. A new “Hyper Wellbeing” industry ecosystem based upon intimate data is starting to emerge. It is complementary to the healthcare industry.

20. It represents computer and data science moving towards health. This is the converse of the existing trend of healthcare moving towards digitization (~ “digital health”).

21. Instead of being based upon episodic physiological data (i.e. a snapshot taken by a healthcare provider when you are sick) it will be based up continuous and periodic physiological data (i.e. taken automatically by your devices when you are not sick).

22. Instead of being solely based upon physiological data, it will extend the biomedical model towards a biopsychosocial model, thereby capturing multipoint data; namely it will add psychological data (e.g. emotions and stress) as well as data about how we actually live our lives (e.g. lifestyle factors such as nutrition, sun exposure, physical activities, environment, sleep, relationships as well as various fluctuating rhythms of life).

23. It will aim to stop us getting sick over the course of a lifetime.

24. Instead of seeing health as binary (sick or not sick) it views health as an extensible spectrum and seeks to move “not sick” people towards psychological flourishing, optimal health and in the longer-term optimal living.

25. Analogous to the emergence of the "digital economy" in the mid-1990s [8] this new health, wellness and optimal living economy is the new battleground unfolding. Companies are set to jostle over their position in the emerging value chain. Everyone from connected sports apparel to mobile companies are set to battle and/or form partnerships around sensing,

capturing, deriving and trading intimate data, and/or leveraging it to be your health/wellness/life coach/app/system for example.

Consideration of Other Events

26. Now that wearables are no longer niche it seems relatively arbitrarily to keep grouping events under the heading “wearables”. Rather they are better grouped as a sub-category related to purpose (intended outcome), e.g. health and wellness.

27. It now seems unreasonable to have “mobile health” only events as that precludes wearables. Wearables stand to have a large impact upon health and their future is inseparable from mobile. Furthermore these events blindly mix together the healthcare model (“sick care”) e.g. chronic disease management apps, along with emerging wellness and optimal living apps.

28. Digital Health covers healthcare (“sick care”) moving towards digitisation - remote patient monitoring, electronic medical records, telemedicine etc. Whereas Hyper Wellbeing represents a new converse trend which is computer/data science moving towards health. Furthermore Hyper Wellbeing does not cover “sick care” and instead covers a) stopping people getting sick over the course of a lifetime b) moving non-sick people towards psychological flourishing, optimal health and in the longer-term optimal living.

29. Mobile events exclude wearables. But the much bigger issue is that they view “communications” as the core product offering and driver of industry value. However such value is now incremental at best. Value is shifting instead towards health, wellness and optimal living. This will have exponential growth.

Confirmed Speakers

As of 28 July, 50 out of 65 speakers are confirmed:

- Alireza (Ali) Tahmaseb, Founder, BLOCKS Wearables, https://chooseblocks.com
- Ali Parsa, CEO, Babylon, http://www.babylonhealth.com *
- Alistair Wickens, CEO, Quealth, http://www.quealth.co
- Ashwin Pushpala, Co-Founder/CEO, Sano, https://sano.co
- Barry Schwartz, Psychologist/Author, Swarthmore College, http://www.swarthmore.edu
- Ben Hwang, Chairman/CEO, Profusa, http://profusa.com
- Benjamin Joffe, General Partner/Entrepreneur, HAX, https://hax.co
- Bob Messerschmidt, Founder/CEO, Cor, https://knowyourcor.com
- Brandon Ballinger, Co-Founder, Cardiogram, https://cardiogr.am
- Carlos Rodarte, CEO, HealthRhythms, https://healthrhythms.com
- Dawn Nafus, Anthropologist, Intel, http://www.intel.com
- David Benaron, Chief Medical Officer, Jawbone, https://jawbone.com *
- Doug Daugherty, Founding Partner/Psychologist, LifeData, https://www.lifedatacorp.com
- Edreece Arghandiwal, CEO, Jurni, http://www.jurni.me
- Eric Williams, VP of Data Science, Omada Health, https://www.omadahealth.com
- Esther Dyson, Founder, HICCup/Way to Wellville, http://www.hiccup.co *
- Geoff Mackellar, Co-Founder/CTO, Emotiv, http://emotiv.com
- Gerald Wilmink, CEO, WiseWear, https://wisewear.com
- Hugo Mercier, Co-Founder/CEO, Rythm, https://rythm.co
- Ida Sim, Co-Founder/Professor, Open mHealth/UCSF, http://www.openmhealth.org
- Isy Goldwasser, Co-Founder/CEO, Thync, http://www.thync.com
- James Foody, Co-Founder/CEO, Ayda, http://www.ayda.co
- Jonathan Palley, Co-Founder/CEO, Spire, https://spire.io
- Joni Kettunen, CEO, Firstbeat, https://www.firstbeat.com
- Judson Brewer, Founder/Professor, Claritas Mindsciences, http://www.claritasmind.com
- Julien Penders, Co-Founder/COO, Bloom Technologies, http://bloom.life
- Kevin Hill, Data Scientist, Pebble, https://www.pebble.com
- Kevin Shaw, Co-Founder/CTO, Algorithmic Intuition, http://algorithmicintuition.com
- Khan Siddiqui, Co-Founder/CTO, higi, https://higi.com
- Mark Rolston, Co-Founder/CCO, argodesign, http://www.argodesign.com
- Martín Blinder, CEO, TicTrac, https://new.tictrac.com
- Matthew Diamond, Medical Director/Physician, Misfit/NYU Hospital, https://misfit.com
- Mikey Siegel, Founder, Consciousness Hacking, http://www.cohack.life
- Mirza Cifric, Serial Entrepreneur/Founder, Veritas Genetics, https://www.veritasgenetics.com

- Mylea Charvat, Founder/CEO, Savonix, https://www.savonix.com
- Nathan Price, Co-Founder/Professor, Arivale/Institute for Systems Biology, https://www.arivale.com
- Neema Moraveji, Director/Co-Founder, Stanford Calming Tech Lab, http://calmingtechnology.org
- Peter Ohnemus, Founder/CEO, dacadoo, https://www.dacadoo.com
- Pierre-Alexandre Fournier, CEO, Hexoskin, http://www.hexoskin.com
- Ram Fish, Serial Entrepreneur, 19Labs, http://www.19labs.com
- Riaan Conradie, Co-Founder/COO, LifeQ, http://www.lifeq.com
- Robert Kaul, President/CEO, Cloud DX, http://www.clouddx.com
- Ron Gutman, CEO, HealthTap, https://www.healthtap.com *
- Ryan Beckland, Co-Founder/President, Validic, https://validic.com
- Sandro Mur, Founder/CEO, Bellabeat, https://bellabeat.com
- Stanley Yang, CEO, NeuroSky, http://www.neurosky.com
- Vahram Mouradian, Founder/CEO, Sensogram, http://www.sensogram.com
- Victor Chapela, Founder/CEO, Suggestic, http://www.suggestic.com
- Visit Thaveep, CTO/Executive Director, Zensorium, http://www.zensorium.com
- Winslow Strong, Co-Founder/CTO, Palo Alto Neuroscience, http://www.paloaltoneuroscience.com

*Still to be added the event website, http://hyperwellbeing.com/2016/speakers

Links

1. http://worldhappiness.report
2. http://www.who.int/nmh/publications/ncd-status-report-2014/en/
3. http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1472
4. http://www.who.int/diabetes/global-report/en/
5. http://techcrunch.com/2016/05/11/disrupting-healthcare-is-a-tough-task-for-startups-and-venture-capital/
6. http://oregonstate.edu/ua/ncs/archives/2016/mar/us-adults-get-failing-grade-healthy-lifestyle-behavior
7. http://www.mayoclinicproceedings.org/article/S0025-6196(16)00043-4/abstract
8. https://www.amazon.com/Digital-Economy-ANNIVERSARY-Rethinking-Intelligence-ebook/dp/B00O2A7J30/

"Our generation has an opportunity, in our lifetime, to put a massive dent in human suffering and make trillions of dollars in return."
- Dustin Moskovitz