

HEALTHOLOGY

HOW TECHNOLOGY WILL INFLUENCE OUR HEALTH

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trend report



INTRODUCTION



Consumer technology has turned the world as we know it upside down. The cell phone revolution, together with the Internet phenomenon, has made it so that we can do more things faster than we could have ever dreamt. We have usurped most institutions and unnecessary interactions with middleman, purely because they have ultimately become redundant in a world where you can instantly talk with someone or find anything out via a simple Google search.

Thus the big question is, which areas of our lives will be transformed by technology next?

One of the fastest growing areas that is rapidly developing new inventions and technological applications is the health and medical industry. We have become obsessed with monitoring and diagnosing our own physical well-being, and as with any other social media output, we are inclined to share our findings with the world.

From the relatively benign GPS function on your phone that records where, how fast, and how far you ran, to the much more invasive digital monitoring of your oxygen consumption ratios through electronic biometric implants on the cellular level, the fastest growing area of technology is no longer outside of us, but rather inside our own bodies.

TRENDS

Self-Diagnosis

Just like travel agencies and print media, the health care industry is embracing technology wholeheartedly. With the seeming limitless possibilities that the modern age of technology permits, the traditional business model of sky-high fees paid to doctors and other health care institutions does not make sense any longer.

Initially, utilizing user technology as a means to self-diagnose was quite risky, but with each update of latest applications and software, it has become much more accurate over time.

An increasing number of medical professionals are adding credibility to using technology as a means of self-diagnosis by using their own software and devices at their practices. The Internet golden rule applies here once again: In this new world, it is not about what you know but rather that you know where to accurately find it.

Digital self-diagnosis has become a great equalizer between doctor and patient, in the same way that Google and Wikipedia searches are leveling the playing field between lecturers and students.

Here are a few examples:

AliveCor distributes a case for your iPhone, along with the accompanying software, that makes it possible for the owner to run and display a high quality ECG. The app also allows you to share this data with your own doctor or hospital.

"Imagine the cost savings impact technology can have for health care — and a patient's life. If, for example, a patient with diabetes is able to track changes or patterns in blood sugar levels and correlate them with particular behaviors, a phone call or electronic communication with his or her physician may prevent a hospital admission or clinic visit." (Accessed via <http://www.foxnews.com/health/2014/06/25/real-time-ecg-from-your-fingertips/>)

During the recent Apple Keynote Address, the technology giant released their own version of user-driven health technology under the name HealthKit. It comprises a collection of applications that reside in your iPhone that can instantly tell you how healthy, fit, and on the move you actually are. Through an accompanying wearable device, such as an iWatch or armband, you can access the latest statistics regarding your blood pressure, oxygen intake, heart rate, cholesterol and much more. (Accessed via <http://asia.nikkei.com/Business/Trends/Apple-flexes-healthcare-muscles-with-new-wearable-device>)

"Intel joins the likes of Samsung, Sony and Google in pioneering 'wearable technology' that can monitor health and be used to control other devices. Sales of products such as Samsung's Galaxy Gear watch has so far been subdued but analysts predict the field could be a massive growth area. Juniper Research forecasts that shipments of devices such as smart watches could reach 130 million by 2018, 10 times more than last year." It's almost as if tech companies will take any type of hardware and turn it into a self-diagnosing device. From Intel's earphones that can measure your heartbeat more accurately than a stethoscope, to Meme's glasses that monitor exhaustion, concentration levels and the amount of calories you burn, could we become so used to the availability of our medical data that it becomes commonplace to us? "Until now, glasses have only been used to see the outside," said Jin's president Hitoshi Tanaka at a press conference in Tokyo earlier this month. "But now we can see what's going on inside the user."

(Accessed via <http://www.details.com/blogs/daily-details/2014/05/these-genius-glasses-will-track-everything-from-your-mood-to-your-energy-level.html> and <http://www.independent.co.uk/news/business/news/intel-unveils-pulsemonitoring-headphones-9044142.html>)



MEDICAL



Health Care
Doctor
Hospital
Pharmacist
Nurse
Dentist
First Aid
Surgeon
Emergency



The Role of the Doctor Changes

Just like travel agents, lecturers, teachers and other specialized professionals, the medical profession needs to realize that the information that previously cost thousands of Rands to access has now become much more available and affordable than ever. For doctors to remain viable in this information age, they need to understand their new role and create a fresh business model to stay relevant within their patients lives.

There is already so much development in this area, and the technologically impaired medical professional can easily link into any or all of the platforms that already exist.

For example:

Doctors must accept that health technology creates patients that will be much more informed, critical and aware. To continue to offer a valuable service, they will have to find a way to take the patients understanding of the information that they already have and create a personalized treatment plan that also makes sense to the patient, and is validated by a medical professional. The time is quickly reaching its end where only the doctor is qualified to give accurate medical advice. "What data can tell us about how to treat patients is about to explode. Combine that revolution with the human intuition of doctors, and treatment is going to get better, more personalized, and more effective." (Accessed via <http://www.fastcoexist.com/3031136/data-and-your-doctor-are-coming-together-to-revolutionize-healthcare>)

Doctors largely do realize that the value that technology has to offer towards communication is immeasurable. Instead of running their practices in isolation, doctors are more inclined to create online networks where they can share and receive advice and to learn. Dr. Josh Landy's app, Figure 1, is specifically designed for this purpose. "Realizing the potential, Landy decided to create an app called Figure 1, the Instagram for Doctors. The app lets users upload medical photos, explore others, and discuss them with the network of medical professionals. In medicine in particular, you will often wait for a consultant to come and see the patient in person because they need to see some specific aspect with their own eyes," Landy said. "This is no substitute for caring for a patient, but now instead of saying there is a red rash, you can say this is what it looks like. Now everybody has that capability in their pocket all day long." (Accessed via <http://www.businessinsider.com/figure-1-instagram-for-doctors-2014-6>)

Unbelievable medical procedures

The perceptions of what is possible within in the medical industry is constantly changing. Boundaries are regularly being crossed between man, machine and technology. Science is making it possible for us to heal faster, function better, and generally live healthier beyond our wildest dreams.

Did you ever consider that you will experience this:

Google's newest development, Smart Connect, allows users to wear a contact lens that not only measures your diabetic levels but also communicates the information on the lens outwards via a micro electronic circuit that is built in on the contact lens. "The two companies said they will create a smart contact lens that contains a low power microchip and an almost invisible, hair-thin electronic circuit. The lens can measure diabetics' blood sugar levels directly from tear fluid on the surface of the eyeball. The system sends data to a mobile device to keep the individual informed." (Accessed via <http://www.forbes.com/sites/leoking/2014/07/15/google-smart-contact-lens-focuses-on-healthcare-billions/>)

Biobots is the interesting technological development of mini-robots that are manufactured from artificial tissue and powered through the body's own electrical field. These Biobots can be used for any internal procedure or as a continual diagnostic system. "You can imagine Biobots reaching someplace inside the body to remove a small bit of tissue for minimally invasive surgery," says study co-author Taher Saif, a mechanical engineer at the University of Illinois at Urbana-Champaign. "Instead of having drugs traveling all throughout one's body, maybe designed to specifically go after some chemical targets, you can have a Biobot with neurons and sensors to more intelligently target specific targets." (Accessed via <http://www.popularmechanics.com/science/health/med-tech/these-tiny-robots-are-powered-by-%20living-tissue-16951028>)



Body improvements and replacements

Technological advances within medicine do not only have to be complementary to our bodies. Some of the most recent developments replace the most fundamental parts of our physical existence, such as blood cells, ligaments and more.

In the past few years, 3D printers have begun to pop up everywhere. We never imagined that bioprinting could ever be the order of the day. With advanced bioprinting techniques, any body part can be duplicated all the way to the micro-biological level. In practice, if you can duplicate a person's blood cells, you can then also duplicate any organs, ligaments or other body parts. "Imagine being able to walk into a hospital and have a full organ printed – or bioprinted, as we call it – with all the cells, proteins and blood vessels in the right place, simply by pushing the 'print' button in your computer screen," says University of Sydney researcher, Luiz Bertassoni. "We are still far away from that, but our research is addressing exactly that. Our finding is an important new step towards achieving these goals." (Accessed via <http://www.wired.co.uk/news/archive/2014-07/03/3d-printing-blood-vessels>)

The latest studies have recently made it possible for a few select patients to become the first users of a bionic pancreas. If you can improve and control this organ through technology, it will be possible for any diabetic to monitor and change their insulin levels without injections. "This is like a dream for a diabetic. It takes away the responsibility. It takes away the high blood sugar and the low blood sugar. It prevents damage to the body and it makes you feel better all the time." What made the wearable, bionic device possible was the invention of the smartphone. It was specifically the iPhone 4, with a low-energy Bluetooth signal that could be used to help the various components of the device communicate." (Accessed via <http://www.nbcnews.com/health/diabetes/bionic-pancreas-astonishes-diabetes-researchers-n130956>)



SPIRITUAL EXPERIENCES

Quite naturally, all of these latest technological advances play a huge impact on how average Christian believers think and feel about their bodies and the spiritual impact of these advancements.

"There is probably a way to worship God through web browsing, but the less our body is tied to our daily life, the less we're able to use it as a way to worship God with our lives. We can't ignore the body's importance in Scripture. We shouldn't ignore its importance to our spiritual life. Because our bodies—knuckles and noses, hipbones and heels—were knit together. Fearfully and wonderfully made. "We are his masterpiece. He has created us anew in Christ Jesus, so we can do the good things he planned for us long ago" (Ephesians 2:10)."

(Accessed via <http://www.relevantmagazine.com/>)

APPLICATIONS

RUNNING DOWN OR WINDING UP

This growing health technology creates people that will likely stay active and healthy, thus living longer. The day has basically vanished when you retire at 65, no longer making an impact. Len Sweet helps us consider these implications in his book *A Well Played Life*, explaining that we live in three age groups: First Agers (0-30 years), Second Agers (30-60 years), and Third Agers (60-90 years). He continues by explaining that in each age group there is a specific goal and focus to strive towards: First Agers desire to live in God's joy. They are seeking who they are. Second Agers focus on how they can maintain their outlook and the joy of their relationship with God within the context of their busy lives filled with work, family and church, asking how my relationship with God give me joy in my family, church, community and creation. Contrary to popular sentiment, Third Agers is actually not the time when life winds down and slowly comes to a stop, but instead it cranks faster with the creation of forward momentum. It's the age where "The older I get the more complex my theology becomes, but the more simple my faith is." These people in the community are the wise sages that can share their faith with the previous two generations.

This reality means two things for us as the Church: firstly, we will have to sit with our members and help them rediscover their identity after they no longer work full-time. We must help the Third Agers to not see the rest of their lives as a futile countdown towards death, not worth anything to society but rather that they view the time left that God has given them as an opportunity to have the most impact. In the season still ahead of them, however brief it may be, they will still create the best possible life. If they found their identity and value as a person in their full time work (as Second Agers) then it will be a very long and frustrating time that lies ahead.

Possible questions:

How does the church help its senior members to still have an impact with their lives after 'retirement?'

Are the terms 'seniors / elderly / retirees' even being used? Are there not better names for this age group that engage their

wisdom and identity more deeply?

Do we create opportunity for the senior members to share the wisdom they have gathered over all the years with the community? To invest their wisdom into the younger generation?

Do we see those who have retired as old people we merely need to minister to until they are no longer with us? Or do we see them as a vital part of the community's spiritual growth and development?

The second aspect of this being older for longer for the congregation is to help the First Agers discover their identity in God. To help people of this age to see their relationship with God as life-giving, fun, and joyous. Also, to equip Second Agers to maintain a relationship with God that is based in joy in the midst of the pressure and busyness of this world.

Possible questions:

How many of the people leading Sunday school and small groups are Third Agers? How can we involve more Third Agers in the spiritual growth of the congregation?



ARE WE READY TO LIVE LONGER

We as the church must also ask how we can help people prepare financially for the fact that they will be living longer. Is there enough provisions made through pension to live from 65 - 90? How can we equip Second Agers to make smart financial provisions earlier in life?

Possible questions:

Does your church offer courses that focus on financial planning?

THE ROLE OF THE EXPERT FALLS AWAY

In this trend, we can see that people become their own experts. The power and possibility to diagnose yourself with growing accuracy lies in the hands of the consumer. Every person who has the necessary hardware, smartphone or apps can self-diagnose. Thus, they no longer need the knowledge of a medical doctor alone.

What is the role that specialist experts play in the church? The trend in health technology helps us realize that people's views of experts and their role in society is changing. The power that is knowledge freely accessed now shifts into the hands of the consumer every day.

Thus the question now, is what is the role of the expert, specialist, or pastor in the local church? Should the role transition to that of a facilitator? How can the spiritual leader help believers to find joyful meaning in their relationship with God, their family, friends and acquaintances?

Possible Questions:

How can we help believers to be responsible with the power of knowledge?

There is a difference between knowledge and wisdom. How does a person use knowledge wisely?

How is the role of pastor seen as specialist or expert?

How can the pastor or spiritual leaders transition their roles to look like a spiritual

facilitator?

How is the believers' role seen as spiritual specialist in the congregation?

DOES THE CHURCH SUPPORT OR SUPPRESS HEALTH

The current trend in health technology has a direct correlation to the impact of sport and opportunities to live a healthy lifestyle in one's life. As such, there seems to be a growing percentage of people riding mountain bikes or running. With this possibility to have the power of our own health in our hands, more and more people are choosing to live out their healthy lifestyles through such outdoor recreation. And so we see the line between health and relaxation blur even further. People will regularly do something as relaxation that will simultaneously improve their health.

This is critical for local churches because the role of the local church can either play a supporting or suppressing role in the fitness lives of their communities. Are we teaching messages laced with guilt if people decide to go for a ride on their bikes instead of attending the Sunday service?

Possible questions:

Where do sport lovers fit within the local church? Do they bike or run, or what do they do for their health and relaxation?

How can we as a local church support these groups of people?
Maybe start a bike or running club.

CONCLUSION

We can clearly see that the intersecting world of medical advancement, technology, and psychology has created a fascinating breeding ground for a new understanding of relationships, disabilities, health and the like.

The responsibility of the church remains to develop believers who have a healthy perspective of their own mortality and the things that make us human. A proper understanding of our own identity and the interaction between body, soul, and spirit is vitally important to be able to live out the story of Jesus in an honest and meaningful way towards a hungry world looking for meaning and purpose in their lives.



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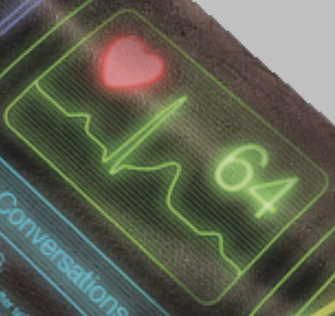
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- Gabriella G.
Pkg. me up after school @ 2:45. Thx...
 - Eben B.
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 - Catherine A.
Can you record the decisions, p27 Th...
 - Mary Ann K.

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