Making Technology Work—The Doctor of the Future

INTRODUCTION

TWIN's mission in 2018 was to compel participants to chase horizons and reimagine possibilities. In the morning during the plenary sessions, we heard from various experts on exponential technologies, learning how these technologies will change the way we live, work, and interact with each other.

In the afternoon, TWINians continued the discussion on Making Technology Work in intimate breakout sessions. Lee Shapiro facilitated an insightful and moving discussion on the Doctor of the Future among our panelists, Archelle Georgiou, Sam Glassenberg, Alex Hurd, Guy Kezirian, and Geoffrey Ling.

Panel Highlights ▶▶▶

ARCHELLE GEORGIOU

"AI won't be able to weigh in when there's just a gut feeling."

With a long career as a physician, Dr. Georgiou is extremely familiar with the diagnostic tests standard in patient care. Good diagnosis is about pattern recognition and AI can be incredibly helpful to get to the next level, but for her, new AI technologies are still

upgraded versions of traditional labs and scans – they offer great potential to save lives, but ultimately are still a tool to be wielded by the experienced physician. The physician has the years of training and experience to evaluate patients and their unique histories that artificial intelligence and machine learning cannot replicate. Particularly in the healthcare system, where errors can have devastating consequences, physicians have to step in and fight for their patients.

GUY KEZIRIAN

Guy is the founder of Surgivision, an ophthalmology consultant group with a mission to contribute to innovate and advance refractive surgery. Surgivision specializes in the use of nomogram technologies that can customize and personalize treatments for patients. Nomogram technologies are validated through data analysis & mathematical models and are completely automated to provide additional assistance to physicians. Guy touched on the importance of understanding patient needs, and customizing solutions to fit those gaps.

SAM GLASSENBERG

"In medical training, we can look to video games because video games are 2-3 decades ahead."

Sam discussed the technology side of medicine. His company, LevelEx develops virtual reality training software for healthcare professionals, with the goal of eventually creating a totally interactive virtual patient. Sam was inspired by the film industry's ability to map human emotions onto animatronics and the video game industry's design of interactive virtual players, so he applied the same technologies to the medical industry. Surgeons have higher mortality rates earlier in their careers, so practicing on virtual patients with real medical conditions and emergencies is key to increasing surgery success rates. While surgery is still an art, it is an art that requires precision, skill and confidence only gained from practicing on patients. Simulations are the next best thing, especially simulations that are scenario-based and replicate real surgical complications.

ALEX HURD

As the Senior Director of Wellness for Walmart, Alex must have a pulse on consumer needs in healthcare. Given its size and reach, Walmart is uniquely prepared to tackle healthcare challenges in America, especially in rural areas. New technologies like wearables, health & nutrition apps, and digital platforms have enabled consumers like never before, providing huge amounts of data, but Walmart is seeking to create even more products, services & experiences from this data to really impact consumers' health. Ultimately, the retail giant is looking towards partnerships and collaboration to help rethink and innovate the business model to treat and prevent illnesses.

GEOFFREY LING

Dr. Ling shared how his work in the military and at DARPA impacted him as a physician and a scientist. Geoffrey described the military as the 'best place and the worst place to practice medicine' – the scarcity of resources often meant throwing out the playbook, but the urgency of situation also fueled innovation and unconventional solutions. At DARPA, Geoffrey helped develop the first prosthetic arm controlled by the brain, fundamentally changing the narrative of what science, medicine and technology can achieve together. He urged us to embrace technology and its ability to prevent, treat and heal illnesses, but also emphasized that what separates man from machine aren't results, but care and compassion.

"The best medicine is the humanity - that can never leave."

Key Themes ▶▶▶

What About the "Patient of the Future"?

Technology has given physicians new tools to diagnose and treat illness, but it has also increased patients' & consumers' access to information. This increased access to information is a double-edged sword – patients are more able to advocate for themselves, their care and their treatment options, but might also be susceptible to misinformation and pseudo-medical allures. It's the job of the doctor of the future to listen to patients' needs and provide compassionate care. Technology cannot replicate the most important role of the doctor, which is to listen and parse out details in the patient's history and compile a holistic image of the person, and treat the person, not just the disease.

Say Yes to Innovation

Innovation comes in many forms. Innovation in healthcare can be tricky, given ethical concerns, regulations and scalability. But for many doctors & scientists, innovation just means finding different ways to solve the same problems. Geoffrey Ling described his frustration in getting generic drugs to remote locations at a reasonable price, then decided to leapfrog the entire process by creating his own machine to generate generic drugs on site. When the problem in front of us is huge and daunting our first instinct might be to follow standard best practices, but technology has enabled us to invent new best practices and transcend the obsolete.

Insights and Implications ▶▶▶

A New Education Model for Physicians

Given the waves technological advances have made in medical research & application, the medical training for physicians has to change. The current system is outdated, still reliant on 20th century teaching dogma based mostly in biological knowledge. No doubt, physicians still need a deep understanding of biology, chemistry and anatomy, but the doctor of the future also needs more experiential training to teach them how to use

advanced diagnostic tools with AI and machine learning components, or training simulations like those provided by LevelEx.

New technologies also provide education and training opportunities for doctors in developing nations or conflict zones. With the injection of exponential technology in medicine, it becomes much easier for doctors working in remote areas to develop their skills, access generic drugs, treat disease or battlefield injuries across the world.

Owning Patient Care

"It's not a technology change –it's a culture change."

Healthcare systems in many parts of the world, especially in the US are convoluted. There are multiple owners across the medical ecosystem, including providers, insurance, patients, and pharmacists. Often, healthcare options are outside the control of immediate care providers like doctors or nurses who best understand the unique needs of the patient and instead are in the hands of administrators, who are focused more on financial objectives. All our panelists emphasized the importance of reclaiming patient care and being present during the entire process of treatment. Doing so also re-establishes a relationship based on trust, communication and respect between doctor & patient, which has a real effect on treatment success.

The Path Forward – What is the Doctor of the Future?

"It's how you interact with that patient that makes you a doctor."

As technologies increasingly automate work once done by humans, even high-level knowledge & skill based work, doctors find their roles changing - our healthcare system will require a 'doctor of the future'. The doctors on our panel described their role according to the Hippocratic oath as to 'cure sometimes, but comfort always' – technology doesn't change the core of the Hippocratic Oath. At the end of the day, the relationship between a doctor and a patient is private, intimate and personal. The doctor of the future will need a different skillset versed in technology to improve diagnostics & treatment, but the essence of care must remain the same. We have to challenge and empower our doctors to differentiate themselves from doctors of the past and machines of the future – the heart of which lies in understanding what makes us human is what makes us exceptional, that is our ability to empathize in tragedy & triumph, our compassion for the sick and ailing and our respect for life.

Special thanks to our panelists Archelle Georgiou, Guy Kezirian, Sam Glassenberg, Alex Hurd and Geoffrey Ling for a great discussion, and Lee Shapiro for his insightful facilitation.

TWIN GLOBAL

About The World Innovation Network

The World Innovation Network (TWIN) is an invitation-only community of innovation and growth leaders from across sectors and geographies. In addition to other activities, TWIN convenes annually for a summit in Chicago from 25 countries and all sectors: business, government, non-profit, the arts, academia, defense. Our group includes leaders at the most senior levels of their organizations, as well as select individuals making differentiated impact around the world.

For more information, visit **www.twinglobal.org**

clareo

About Clareo

At Clareo our mission is to help businesses adapt and grow. We help leaders adapt their businesses and create new ways to grow in rapidly changing markets. Together, we build the plans and capabilities that deliver results. Our clients choose Clareo when they want bold new ideas fueled by a network of leading global experts. Working alongside our clients, we create compelling strategies that lead to action.

To find out more, visit **www.clareo.com**.