

Feb 2018 @ CTM

THE DIRECTOR SPEAKS - "Innovation Is a Human Process Driven by Data"



This month I had the opportunity to attend the 3rd Annual Innovation Coast Conference. During the conference, there was one session on Thinking Machines that was really interesting. What I found most interesting is that the session began with a disclaimer. The terms artificial intelligence, business intelligence, and thinking machines are ill-defined terms that are often used to create a sense of awe around a topic that would be better served with a more deterministic definition. This is not to say these products are not amazing – they are indeed that but they are also not magic. The vast majority of these systems are built to emulate the thinking patterns of some known expert and then the systems are fed vast volumes of data which can be processed quickly by these defined algorithms. If the expert is wrong, if the data is flawed, if there is something unexpected happens, the outcome could be pure garbage.

These systems look at data with the expectation that the data fits a pattern likely to point to an unknown trend. In the experience of the panelists, 80% of the effort associated with a large AI data project is spent cleaning up the data – data with holes and spurious reports can drive these processes off the charts into unexplored territory. While human oversight of such automated processes can often determine if the findings are sensible, there are times when it is difficult to tell whether the trend based result is plausible. And it is often difficult to determine if conditions have changed sufficiently to make the trend data obsolete. The example was given that it is impossible to predict future economic conditions or investor behaviors which is why there is no such thing as an automated stock picker. The best that can be done is to create a recommendation engine that respects that its underlying economic model may be flawed. The parting thought of the session was that we do not have to fear automated intelligence, but we do have to worry about checks and balances that are applied to purported intelligent systems.

UPCOMING EVENTS

- **February 5-6, 2017.** [Digital Entertainment World](#), Marina Del Rey Marriott, Marina Del Rey, CA
- **Feb 9, 2018.** [Grief Entrepreneurial Demo Day](#), USC Tutor Center Ball Room, Los Angeles CA
- **Feb 14, 2018.** [The Business of the NBA](#), USC Founders Room in Galen Center, Los Angeles CA
- **March 2, 2018.** [The Business of Entertainment's E2 Conference at USC \(The future of screens\)](#).
- **March 22, 2018.** [The Los Angeles Cyber Security Conference 2018 at the Airport Marriott](#)
- **May 7-9, 2018.** [Accelerating the Innovation Economy n SmartCities](#), Santa Clara Convention Center, Santa Clara CA
- **May 4, 2018.** [ISSA-LA Information Security Summit](#), University City Hilton, Universal City CA
- **May 7-11, 2018.** [Advanced Management Program \(AMP\)](#), is a unique program designed to give your high potential employees the skills they need to anticipate, prepare, and communicate in an increasingly dynamic and technology-driven world. The content will focus on market factors that have and continue to disrupt the market and the workplace. More details can be found in the [course brochure](#). Registration is open and can be found at [here](#).

If you have an event that you would like us to include in our newsletter, please send an email to ctm@marshall.usc.edu

IN CONVERSATION WITH DAVE ABBOTT, Vice President IT Operations at Children's Hospital Los Angeles



Dave Abbott is the Vice President of Information Technology Operations at Children's Hospital Los Angeles (CHLA) where he has developed a reputation for being able to use technology as a tool to develop/integrate advanced business solutions that bring tangible benefits to CHLA. Dave is quick to point out that the complexity of today's business solutions demand a cross-functional perspective that starts with a solid strategy, focuses on the processes that surround the operational objectives, and follows through to consider the delivery and quality assurances needed to ensure success.

1) Can you begin by telling us a little bit about yourself and your career journey? Did you grow up wanting to be an IT person at a major hospital?

Early on, I didn't have much interest in technology. In high school, while I played sports and was intrigued by our trainers and various treatments, etc. but I really wanted to be a FBI or Secret Service agent. In the end, rather than trying to become a spy, I opted for another career path and started my course of studies a Physical/Occupational Therapist. During my first 3 years of studies I came realize there was a better path for me and changed degrees to Health Management Information Systems. Post college, I started my professional career with Accenture (Anderson Consulting at the time) working in various non-health care industries delivering a variety of technology solutions. From there I began to focus and went on to Mattel for almost 5 year functioning in enterprise technology leadership roles. It wasn't until 2013 when I had the opportunity to make a career change and move to CHLA where all my interests have come together.

2) Historically, IT departments were considered to be support organizations but over time, as technology became more persuasive, the role of IT has shifted to make them much more operational and strategic. Can you talk about the changing nature of IT from a legacy perspective and speculate on how it might evolve going forward?

Technology is a powerful enterprise enabler. Though different companies may dictate different organizational positions, technology is always critical as an enterprise function. In today's world and going forward, information technology will need to be even more woven into and aligned with the enterprise strategy. When properly aligned, technology can bring immense value to an organization by optimizing and gaining efficiencies that otherwise might not have existed.

3) Security is a major concern for any IT department and it should be a major concern for each of us as individuals as well. Can you shed some light on the seriousness of these threats? Some think about security as a technology issue but people have an active role to play in the process. Can you also highlight the importance of individuals have to play in securing their own data?

The ever-changing threat landscape is gnarly. Security should be top-of-mind for everyone as it's a multi-faceted (people, process, technology) issue that has to be considered systemically. Technology and tools are a vital part of any security program, but it takes well defined processes to monitor, manage and report on what the platforms capture. Compliance and governance is also critical. But most importantly, people need to possess the right skillset and all employees need to be educated on the evolving threat landscape and their role to help protect the organization.

4) To an outsider, healthcare seems to be a complex relationship between the healthcare professional, corporations (such as hospitals and insurance companies), regulators, and others are they all try to find an equitable balance against a common goal. Technology appears to be a disruptor that could improve collaborative efforts between these group but with a caution that it could also create new problems. IS this something you could elaborate on?

There is no doubt that systems needed to support the healthcare ecosystem is complicated. When implemented correctly, taking into account the various needs and use-cases, technology acts as a bridge to enable cross-functional groups to be effective. Leadership becomes the key to making sure this tech infrastructure functions properly and meets the intended objectives. As an operational enabler, technology can be considered to be a disruptor that is needed to help organizations think and operate differently as they strive to continually improve their effectiveness.

5) When one thinks of IT operation at Children Hospital we first think about this hospital proper but the ecosystem you have to think about goes way outside the confines of a physical hospital. Can you provide a broader perspective so we understand the complexity of a modern healthcare network?

Healthcare is an awesome industry – it is both dynamic and broad-reaching. Thus it requires one to think differently than in many other industries. It is critical to go beyond thinking about a hospital as a business as one has to consider the patients and families when implementing technology. Additionally, enabling the clinicians (Dr's, nurses, etc) is vital to any solution regardless of whether it is in the inpatient or out-patient setting. Given that platforms such as telemedicine and health networks are becoming more and more prevalent, it's extremely important to consider all variables whether it's inside or outside of the hospital (virtual) walls.

6) In today's world, technology feels like it is evolving at an ever increasing rate of speed. Such an environment makes for a difficult work environment in that not only do you have to think about your job today, but you have to constantly be preparing yourself for that evolving future environment. If you compare today's technology worker with the workplace needs 5 years in the future, how do you think things will change.

I'm excited to see how technology will continue to change and evolve over the next 5+ years. I don't feel that certain "core" technologies will change that drastically, but the underlying architectures will, thus making folks more productive and effective. As it pertains to the future technology worker, we'll have to wait and see what the future brings, but I do feel it's going to be even more amazing than today as information will be even more accessible and that will continue to improve healthcare outcomes!

CTM RESOURCES

CTM has a long history of making topical and thoughtful information available to the CTM Board so they can better guide the evolution of CTM (and potentially internalize this information within their companies as well). That said, the CTM community includes many who are interested in topics related to how technology and business intersect so they can capitalize on nuanced opportunities brought about by these disruptive influences. In support of the larger CTM community, we are making a select set of interesting documents available to the this vibrant and growing community.

- [Business and Technology Program Report](#). The 2017 technology and business program provides a better understanding of the relationship between technology and business processes. Technology is used to meet competitive pressures and to reduce operational costs. It is seldom deployed as a strategic tool because it is difficult to predict and validate return on investment. This difficulty is often related to a mismatch between corporate culture and technology potential. The main goal of CTM's Technology and Business Program is to pierce this veil and provide business guidance that is linked to technology trends. CTM undertook to collect a statistically significant amount of data from companies that were growing much faster than their peer competitors to better understand the organizational processes that enable technology to drive business process breakthroughs. This report investigates six specific areas of interest, covering 1) the use of technology relevant to speed/accuracy trade-offs, 2) privacy, security, and trust, 3) analytics-driven business models, 4) geographically-distributed tasks associated with "create" and "review" artifacts, 5) new emerging technology impacts in supply chains, and 6) innovations requiring the attraction of two parties.
- [Future of Media Program: Evolving Revenue Models](#). The media industry is currently undergoing a radical transition that has been accelerated over the past three years. At play are deep changes in the way consumers view filmed entertainment and how the industry makes money. In this report, we look at the evolving business models for media monetization from advertising to subscription and transaction. We also study the impact of new and emerging business models on the economy of the media industry. Special attention is paid

to Millennial consumers who are estimated to outnumber non-Millennials by 2030. This generation is likely to greatly impact the growth of new business models going forward. To fully understand this program, please purchase our report.

- **[Internet of Things \(IOT\) Model](#)**. The Internet of Things (IOT) is a collective term that includes a large number of different IOT devices and different applications focused on different use cases. Everyone agrees the potential of the IOT market is huge – it is so big that it is often difficult to figure out what to do or how to approach it. CTM has undertaken a large IOT modeling program to help the industry cope with this issue by improving their ability to consider the impact it might make to a large and complicated market. The effort began with a market research program to understand the price elasticity of more than 50 different IOT opportunities. The bandwidth from these applications was modeled as network bandwidth in order to characterize the traffic volumes that play a critical role in determining the cost characteristics of a specific IOT application. Based on the model that CTM has developed, users will be able to identify profit pools within the larger IOT market, they will be able to test how changes in product pricing will affect product demand and they will be able to test how different functional characterizations impact traffic flows and operating costs. Effectively, the modeling tools allow users to adjust the parameters that drive the IOT market so they are reflective of their personal view of market evolution. This will help determine what actions that can take to turn these opportunities into business results.

THINKING AMP: Those Answerless Questions



I'm at Costco today, shopping with my wife. My job is to push and mind the cart. I do a lot of thinking while I am walking around the store, and today is no exception. I am standing at the aisle that has the batteries piled up at one end, and as I look at them, I am thinking about an idea that has been rattling around for a while now in the vast emptiness of my head. Specifically, I am thinking about the topic of answerless questions that occasionally pop up for which there are no good answers. Comedians have had a field day with these: Since bread is square, why is sandwich meat round? Why is Braille on drive-up ATM machines? Why don't we have A and B-cell batteries, since we do have AAs, AAAs, Cs, Ds, and whatever those big blocky things are called? And my personal favorite, what makes the Teflon stick to the pan?

These are fun to laugh at (Is it true that cannibals don't eat clowns because they taste funny?), but there's a serious undertone to the subject that lies at the heart of good leadership—and, by extension, good storytelling - both key elements of the AMP program. We laugh at these questions (If Denny's is a 24-hour restaurant, why is there a lock on the front door?), but the reason they are funny is that we've never thought to ask them ourselves.

People who come up with these questions, whether comedians or otherwise, have a special way of stepping back and looking at things a bit differently than the rest of the world. It is an element of leadership that directly links leadership to the craft of storytelling.

Good leaders are adept at identifying opportunities to ask, "What if ... "as a way to change the way people think about the professional world around them. When a respected leader muses, "Wouldn't it be powerful if were seen by our customers as ...", that person is planting a seed that changes the way the people around them see the world in which they operate, and hopefully inspires them to take action to make the change happen. Leadership is about guidance and vision in equal measures; by asking the right questions, and then giving people the ability to seek the answers, good things happen.

Leadership is about vision, and vision comes from asking the right questions and listening to the answers. It's why we deliver the programs we do —to enable vision in our leadership audiences.

THE I³ CORNER:

The Intelligent IoT Integrator (I³) is a new consortium being jointly managed by the Viterbi School of Engineering and the Marshall School of Business. The goal of the consortium is to create networks of independently managed IOT streams from a disparate community of IoT device owners that can be consolidated into a powerful data river. This frees applications from having to build and maintain relationships with expansive communities and it allows the device owners to play an active role in the evolving data ecosystem. The founding members of the I3 consortium have created a set of operational by-laws and a draft membership structure that is being designed to support participation from a diverse and open community of interested parties.

READINGS FROM THE EDITOR'S DESK

- Many retailers have attempted to pursue cashier-free shopping experiences. Amazon's strategy makes use of video to decide which items are in the shopping cart and which are returned. A video-based solution has the added advantage in that it allows Amazon to capture those "almost" bought that moments that provide even deeper marketing insight. ([In an Unexpected Move, Amazon Just Made Its Biggest Announcement Since Acquiring Whole Foods](#))
- Europe believes its citizen have lost control of their data and are moving forward with General Data Privacy Regulations (GDPR) in an effort slow market forces down. The unintended consequences of such punitive measures remains to be seen. ([WTF is GDPR?](#))
- Often, when people think about IOT, they think about using the network to collect sensor data. But IOT includes support for actuators. When sensors are used to detect real-time conditions, artificial intelligence determines a real-time response strategy, and actuators put the recommendations in-place we will have transformed our world to unlock true potential. ([Intelligent IOT](#))
- Our hyper-connected world is working to redefine our understanding or marketing. Marketing used to be a pushing a message in order to influence buying behavior but rapidly become a science aimed to build customer profitable customer relationships ([Marketing as Relationship Scientists](#))
- The autonomous vehicle market will continue to evolve over time. Early adopters of the all-autonomous philosophy will likely be for applications where uncertainty and risk can be minimized. Expected early adopters include autonomous taxis, autonomous deliver services,

and autonomous shuttles. ([A User's Guide to the Dawn of Robot Driving](#))

READER CONTRIBUTIONS - "Can Video Gaming Solve World Problems?"

As a new feature, this month the CTM newsletter has opened itself to accepting articles from our readers on topics pertinent to the use of technology in business and the impact of technology on markets.



[Saleh Stevens](#) is the CEO of Continental Clinical Solutions and his the first reader contribution to the CTM newsletter. His company focuses on providing healthcare services in underserved communities through the help of social innovations. Most recently, he has been investigating how gamification techniques can be used for social good. Mr. Stevens maintains a web site (<http://salehstevens.com>) that includes topics related to video gaming, cryptocurrency and other related topics. More information about Continental Clinical Solutions can be found at <https://www.continentalclinical.com>.

Can Video Gaming Really Help Solve World Problems? The gap between the virtual worlds and reality constantly being narrowed by the video gaming industry. The modern video gaming industry date back to the early 1970s with first generation gaming systems such as the Computer Space and the popular Atari. This industry has come a long way in a short span of time with the yearly advancements in gaming software and the use of different devices such as controllers, tablets, and eyewear.

The Purpose of Video Gaming. In the beginning, video games were merely used for entertainment purposes. There was no other purpose but for pure leisure, as a time to bond friends and family, and to 'kill' time during moments of boredom. However, the recent developments in video game technology have proven far more useful than it was originally intended for. We can actually use video games to solve world problems! Consider the following four key ways on how video games can be used to make the world a better place.

Four Ways on How Video Games Can Solve World Problems

1. **Providing awareness on social issues.** Since video games provide an alternate 'reality', people can be exposed to information that they wouldn't usually be interested in. For example, one can create a video game on climate change or drug use. Some video games are created to increase social awareness and provide a lasting impact on its cause. The best part is, these issues are not just presented as they are, but is rather shown in an engaging manner for the players.
2. **Education gaming.** It may seem like a contradiction, but it is possible to combine education and gaming. How is this so? By creating games that provide information and insight on the lesson given. For example, students can enjoy playing a trivia game about art or exploring a virtual museum. This is more cost-effective if traveling to a museum is not possible at the moment, but still gives an opportunity for students to learn.
3. **Creating a sense of teamwork and collaboration.** Another way on how video games can change the world is its ability to create situations where people can team up to conquer a challenge, solve a problem or show their skills. This gives the individuals a sense of unity and the chance to showcase their strengths in where it is needed the most.
4. **Simulation of actual events** Virtual reality in gaming has been gone as far as creating almost-realistic scenarios. People can wear an eye gear which helps see a computer-generated world. They can identify themselves as a different character and perform different roles on that virtual world. Given this advantage, people can make use of this simulation to train people in possible actual situations such as emergency responses, medical surgery and even military training.

The recent developments in gaming involve the use of virtual reality and artificial intelligence to bring people into simulated environments. Continental Clinical Solutions CEO Saleh Stevens recently said, "We can see this technology continuously being developed for use in non-gaming industries such as healthcare, emergency services and construction. It has helped professionals in these industries to improve their craft and provide good service with lesser operational costs and risks." When we look forward, we expect to make even greater strides in this area.

SUPPORT CTM

Please feel free to forward this email to your friends and colleagues who you believe would benefit from participation in the CTM community. For those of you who wish to be included in the CTM family of people who believe that technology is a tool and that business success is achieved by skilled wielding of the tools available to us, you can [join the CTM family by registering on our home page](#). A voluntary subscription would be appreciated for those that want to give back and help grow the CTM community. If you have suggestions, topics you want to see included in future newsletter updates, or other general inquiries, feel free to email us at ctm@marshall.usc.edu.

For physical mail correspondence: USC-Marshall-CTM, 1149 S Hill Street, 9th floor, Los Angeles CA 90015

Got a Business or Technology Issue? A Strategy Question?

The CTM team is dedicated to working with its member companies to better understand the increasingly dynamic business world in which we live. We believe that companies must lead in order to prosper in a world where the threats and opportunities facing us are constantly evolving. Feel free to reach out to the CTM team at ctm@marhsall.usc.edu if you would like to start a conversation.

ABOUT CTM

Founded in 1985, the Institute for Communication Technology Management (CTM) is the world's foremost institute at the intersection of technology and content and represents a powerful network of industry leaders involved in every facet of the digital media value chain. For more

about CTM go to marshall.usc.edu/ctm.