

February 2019 @ CTM

THE DIRECTOR SPEAKS - Happy Data Privacy Day



January 28 was Data Privacy Day. The purpose of Data Privacy Day is to raise awareness about data privacy and to promote the best practices for privacy protection. For many who celebrated Data Privacy Day, many of the conversations focused on the EU's General Data Protection Regulation (GDPR) or California's Consumer Privacy Act (CCPA) which is scheduled to take effect Jan 1, 2020. These rules are examples of efforts being taken to insure people are informed and have an active voice in determining what the companies they choose to engage with can do with their data.

Most of the requirements embodied in these efforts are not new, the US and Canada have a complicated myriad of privacy laws at the federal and state levels that address both data privacy and security issues. However, most of these efforts have been tailored to fit the needs of specific industries, data subjects, processing activities, and targeted types of data. Each of these efforts had been developed to surgically address a very specific need. Navigating this maze of requirements is very difficult, especially when a company transcends the organizational boundaries imagined by the framers of these rules. For example, HIPAA was developed to provide specific rules for use in the health care industry but for companies that provide wellness services, a related by different market sector, applicability of these rules might be best viewed as a best practice rather than a requirement.

Some people have proposed the creation of a more omnibus privacy structure in the US to harmonize the many laws currently on the books. This would most likely improve awareness, normalize the vernacular, and most likely improve enforcement. However, some privacy rules will remain specific to an industry and some regional authorities may want add requirements that address local issues. The assumption should be that any such omnibus does not eliminates the need for more targeted practices; such rules simply provide a common baseline upon which additional rules can be created. Further, such an omnibus privacy baseline simply becomes the line in the sand that organizations should not cross. Such a red line would be designed to avoid or minimize damages - this is not the line organizations should consider as their aspirational objective. All organizations, private, public, and governmental should always be targeting to delight their customer and that means achieving much more than a defined minimum expectation.

UPCOMING EVENTS

- **March 1, 2019.** [E2 Conference: The Future of Entertainment](#), USC Campus, Los Angeles CA
- **March 19, 2019.** [CIO Summit](#), Lowes Hollywood Hotel, Los Angeles CA
- **March 21, 2019.** [Marketing Leadership Forum](#), downtown, Los Angeles, CA
- **March 29-30, 2019.** [Emerging Technologies Conference](#), USC Campus, Los Angeles CA
- **April 10, 2019.** [Digital Summit](#), Skirball Center, Los Angeles, CA
- **May 13-16, 2019.** [IOT World](#), Santa Clara Convention Center, Santa Clara CA
- **July 10-12, 2019.** [NIST Smart and Secure Cities Expo](#), Walter E Washington COvention Center, Washington DC
- **Sept 10-13, 2019.** [Global Network for SMART Organization Design](#), USC Campus, Los Angeles CA

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 Ken Hosac, VP IoT Strategy & Business Development at Cradlepoint



At Cradlepoint, Ken is responsible for driving strategic industry partnerships to accelerate the company's market growth and leadership. As part of the leadership team since 2009, Ken has helped drive Cradlepoint's growth and development through roles in strategic planning, product management, solution strategy and thought leadership. Ken frequently represents the company at industry conferences and events, and served on the original Advisory Board for the IoT/M2M Evolution Magazine. Ken has 25 years of experience in marketing, sales, R&D and manufacturing. Prior to joining Cradlepoint, Ken served as VP of Marketing for Casabyte (later acquired by JDS Uniphase), the leading provider of service validation solutions to wireless service providers. Ken also served as VP of Business Development for GoAhead Software (later acquired by Oracle), the leading provider of high availability software to communication infrastructure providers. Ken earlier spent 10 years at Hewlett Packard with cable modems & head-ends, set-top boxes and personal computers in a variety of engineering and engineering management roles. Ken holds a B.S. degree in Electrical

Engineering and an M.S. degree in Manufacturing Engineering, both from Stanford University.

There is a lot of confusion about what qualifies as 5G. Some use performance, some use network architecture, while others use standards as the basis for their definition. How do you define 5G?

There is certainly a lot of confusion around 5G definitions. There's two definitions from the standards bodies (ITU & 3GPP) and multiple definitions from the mobile operators' marketing teams. These mobile operators are very market-driven and will create whatever definition gives them a competitive edge. We generally start with 3GPP (3rd Generation Partnership Project) since the wireless industry typically follows their release cadence (ie, LTE Cat 3, Cat 4, Cat 12, Cat 18, etc). However, we ultimately follow the lead of the mobile operators since their multi-million dollar marketing investments typically carry the day with public perception.

One differences between 4G and 5G is that 4G was very regimented whereas 5G has a lot more operational options that allow service operators to adapt to different local services. Can you talk about how different flavors of 5G will allow a more agile network structure to emerge.

In some ways, 5G is like the older Disney movies that cater to multiple audiences, young and old, at the same time. One flavor of 5G provides High-Speed Broadband that will compete with current wired broadband connections. Another flavor of 5G provides Mission-Critical Control for applications that require high reliability and low latency such as autonomous vehicles and virtual reality. The final flavor of 5G supports the massive Internet of Things (IoT), including devices that require low-power, low-cost, and high-density. 5G supports a wide variety of use cases, and the mobile operators are looking forward to this diversity.

>strong>When we think about 5G, we usually think about wireless networks but it will also drive a lot of change to the terrestrial network. Can you talk about the activities that have to be considered to get ready for a 5G upgrade.

To achieve the scalability and low-latency of 5G, the macro and small cells for the 5G network will be much more dense than the more widely-spaced 4G networks. Additionally, the backhaul requires tremendous bandwidth, typically from fiber networks. These two factors require a very solid terrestrial network to support the density and throughput requirements. We've seen some very interesting strategies, including wireless operators purchasing fiber, fiber infrastructure, and even wired providers. Billions of dollars are being invested in these terrestrial networks since wireless 5G can't be deployed without them.

Technology is an enabler and as such 5G will enable new applications to become viable, it will support new business models, it will change our level of mobility as a society. If you are a business that knows this change is coming, what would you be looking at today to be ready to take advantages of the new capabilities 5G will realize.

That's the magic question - most of our enterprise customers are beginning to explore the opportunities created by 5G. Some enterprises will use 5G to enhance existing applications in significant ways. Others will use 5G to create entirely new applications that weren't possible before. According to an IHS Markit study commissioned by Qualcomm, they predict that "5G will be as transformative as electricity". For those business that recognize the change that 5G will bring, our advice is to "think big". The advent of the Internet brought significant changes to the travel and retail industries (think Expedia & Amazon) that few imagined. For this transition to 5G, be one of the few!

STEVE SHEPARD: The Reality of Virtual Reality



I had the opportunity recently to spend the day with an Oculus Rift headset on my face, engaging with a series of immersive 3D virtual reality (VR) applications. I have to say that I was more than a little skeptical; the last time I engaged with anything resembling VR was in the mid-90s, when I stood on a small platform surrounded (for good reason) with a railing, put on a helmet, and engaged in a shooting game with another player on a giant checkerboard that appeared to be floating in space. For the time it was wonderful, although the video lagged badly, the graphics were just OK, and the experience was less-than-overwhelming.

So, you can imagine how I reacted to the VR experience I had with the Oculus glasses. It was night-and-day: there was no latency in the image as I turned my head, and the graphics were so good that I was overwhelmed with vertigo when the roller coaster I was riding in crested the hill and headed down.

But that's just part of the story. Imagine, now, a very different set of applications—all of which are now emerging. Medical schools are now using VR and headsets to allow their students to perform virtual dissections on virtual cadavers. Engineering firms can now allow clients to walk through new buildings, before the first shovel goes in the ground. Medical researchers can visualize interactions among complex molecules during drug creation processes, to ensure that the result is what they are looking for. City planners can now visualize everything underneath a city street, in three dimensions, before they start to dig and risk the damage to critical infrastructure.

No longer the sole domain of gamers, VR and 3D visualization is now emerging as a game-changer in the enterprise. Stay tuned: There's much more than meets the eye!

THE I³ CORNER (I3.usc.edu)

One January 4, the I3 Consortium held its first IOT Conference/workshop. The event was well attended and by all accounts, the event set a high bar for any future events. What made the event so valuable for the attendees was that it was really three events in one. There was a more traditional conference track where a variety of speakers talked out progress and issues being faced by the IOT and Smart Cities communities. There was a technical track that targeted to the engineering community that was working to bring the latest IOT concepts to life. Finally, there was a workshop track which was much more interactive in nature, intended to table issues that were just coming to light. At one venue you could jump between sessions focused on realizing value from today's technology, move on to a session working to bring the next generation to life, and even participate in a conversation about shaping the next steps beyond that.

There were a half of dozen SoCal governments participating at the conference/workshop. One of the take aways at the end of the session was that while each organization has different needs that drive them down different paths as they seek to turn technology into benefits for their citizens, there are common underlying issues that can be served by a common platform. By working on these foundational issues together, the end result will be a platform that allows them to pursue their individual needs more effectively.

Looking forward, the I3 Consortium is working to establish a semi-annual cadence for these kinds of events. We are hoping to secure a venue for an event in the late May time frame that focuses on how emerging 5G technologies will work to further accelerate the deployment of IOT systems. By all means, please let us know if you are interested in participating as a sponsor for this event or if you wish to propose a speaker for the event.

READER CONTRIBUTION: Active Digital Leaders Drive Performance by Pete Cardon



The article “Leadership Communication on Internal Digital Platforms, Emotional Capital, and Corporate Performance: The Case for Leader-Centric Listening” by Peter Cardon, Yumi Huang, and Jerry Power was just published in the International Journal of Business Communication. The article is based on two studies: (a) CTM’s 2016 enterprise survey of 1,004 managers and (b) follow-up interviews of early-career managers that were conducted in 2017 and 2018.

The foundation study showed leaders in more positive organizational cultures (i.e., those with high emotional capital) are 3 to 4 times as likely to frequently communicate on internal digital platforms than those in less positive organizational cultures (i.e., those with low emotional capital). These leaders in high emotional capital (EC) organizations are able to extend their influence much more broadly across their organizations. No aspect of communicating more distinguishes leaders in high EC organizations from those in low EC organizations than the ability to listen to employees on internal digital platforms.

The follow on study explored the notion of digital listening in depth. It demonstrated the perplexing nature of what constitutes digital listening by leaders. Participants in the second study suggested digital listening by leaders is primarily leader-centric rather than employee-centric. Moreover, employee voice is more often than not perceived as a collective voice rather than an individual voice.

Digital listening by leaders emerges primarily from the leaders’ presentation of strategies, initiatives, and other ideas. Leaders may also ask questions to employees. Yet, these questions are rarely focused on employees’ original perspectives. The questions tend to be framed, specific questions to address issues of interest to leaders. In many cases, these targeted questions are no more than testing grounds for pre-established ideas of the leaders. Employees do expect interaction primarily in the form of asking questions and to a lesser degree receiving questions from leaders. Furthermore, they expect follow-up.

Employees appear to be content when the collective voice—not their individual voices—is expressed. Participants described dozens of scenarios in which individual employees could not be heard: leaders were running events, posting messages, and responding to questions in synchronous and asynchronous environments when hundreds if not thousands of employees were watching and generally passively participating. They also described the value of anonymity if giving input. Overall, it appears employees expect leaders to understand representative views of the employees. They rarely expect to be heard on an individual level.

Bottom line: Leaders who are active communicators on internal digital platforms contribute to positive cultures and better organizational performance. They should be open and transparent about strategic initiatives and important company updates while using digital platforms to seek the collective voice of employees.

READINGS FROM THE EDITOR'S DESK

- **[In High-Tech Cities, No More Potholes, but What About Privacy?](#)** As cities evolve to become smarter cities, they need to strengthen privacy, security, and financial controls; a smart-city is not a technology play, it is a cultural change that is enabled by new technical capabilities.
- **[Four Ways to Win the Fourth Industrial Revolution.](#)** The fourth industrial revolution represents a set of transformative technologies that drive changes to businesses, governments, and society at large. The changes brought about are not linear changes but will result in disruptive that has to be embraced systemically to fully realize these new capabilities.
- **[It's time to reimagine the marketing funnel](#)** The concept of a marketing funnel was first created in 1898 when the goal was to grab someone's attention and point them toward a sales solution to their needs. Marketing has changed dramatically as business has changed and now must focus on customer experience along the entire expanse customer journey in order to maximize customer lifetime value.
- **[Why it's So Hard to Implement IoT Security](#)** As IoT technology continues to evolve, literally everything has the potential to become instrumented. From a security perspective this dramatically increases the potential attack surface but in terms of volume and variety. And, while there are many guidelines for securing new devices, the number of legacy devices continues to grow and it is these legacy devices that are especially challenging.
- **[How to select the best project management methodology for your IT business.](#)** There is no such thing as a universal hammer or a nail. The right project management process for IT, or for any project, depends on the resources available, the type of project, and the targeted customer. Perhaps the project management decision itself should be an agile decision.
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CTM RESOURCES

CTM has a history of making topical and thoughtful information available to the CTM community. In support of our community, the following may be of interest to our readers. See marshall.usc.edu/ctm for a complete list of resources.

- **[The Need for a Fourth Industrial Revolution Operating System \(free\).](#)** The adoption of Fourth Industrial Revolution thinking to our data-centric world may require that we rethink the macro systems that govern the way that humans relate to the data that surrounds them. In the 4th Industrial Age it is interesting to think of the technology around us as resources which could be managed by a societal operating system.
- **[How AI Could Tackle City Problems Like Graffiti, Trash, and Fires \(free\).](#)** Cities operate fleets of diverse vehicles to serve their citizens. If these vehicles were equipped with video cameras, the captured images could be used by video analytic programs to self-detect many city operational issues in need of attention so appropriate crews could be dispatched without waiting for citizen complaints to be registered.
- **[I3: An IoT Marketplace for Smart Communities \(free\).](#)** I3 (The Intelligent IOT Integrator) is a data governance vehicle that manages IOT data flows for many independent device owners. It supports the user's need to self-manage their own data streams, manages participation incentives, privacy, and monitors device security. This curated environment creates the free and open IOT data marketplace needed to accelerate IOT adoption.
- **[The Evolving Internet of Healthcare Things \(free\).](#)** Healthcare IOT applications can be divided into hospital, doctor, and consumer applications. Over time these isolated worlds will blur and there will no longer be a single administrator that oversees the network infrastructure; healthcare data networks will be an open and fluid environment. New systems will be needed to manage vendor neutral data repositories and to govern data flows.

- **[The Fan Multiplier Effect \(free\)](#)**. Marketing Programs should be driven by behavioral objectives and measured by metrics. Instead, many marketing campaigns focus revenue driven objectives even though campaigns designed to increase fan engagement can often drive greater strategic value. This paper focuses on efforts to drive fans to advocate for a product or service so that they become your revenue drivers.
- **[Internet of Things \(IOT\) Model](#)**. CTM has developed an Internet of Things (IOT) model that allows users to identify profit pools within the larger IOT market, test how changes in pricing will affect demand, and see how different functional characterizations impact the model. The modeling tool is sufficiently flexible that the users can adjust the parameters in order to develop a personal view of market evolution.

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 ([click here to contribute](#)). 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.

The idea expressed in this newsletter are intended to stimulate conversation and dialog that will lead to a better understanding of our collective future. The opinions may not necessarily reflect the opinions of USC, Marshall, CTM or the wider CTM community.

GOT A BUSINESS, TECHNOLOGY, STRATEGY ISSUE?

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 via email at ctm@marshall.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.