Committee Newsletter | Fall 2016

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NEWS AND ANNOUNCEMENTS >>
Committee Introduction

The Young Lawyers Division Science and Technology Committee is pleased to present our first Quarterly Newsletter. Each quarter, we will publish a selection of articles written by our members on various topics related to science and technology. We hope that you will find each Quarterly Newsletter a source of relevant and timely information that assists in keeping you abreast of current science and technology law developments. If you have an article you believe others may benefit from, please consider submitting your article for publication consideration in our next newsletter. Our content editor is Melodie Arian – please submit your articles directly to Melodie at melodyarian@gmail.com.

ARTICLES

Fishing For Opportunities in Data Lakes
By: Patricia Connelly

“Big Data” continues to be a buzz phrase organizations use to describe the enormous volume of data captured through ordinary, daily transactions. Previously, this data went unused because organizations found little value in data aggregation. Now, many organizations
understand the value of integrating information technology ("IT") into their strategy. As advancements are made in storing data in cost-effective ways, new opportunities for organizations to gain a competitive edge have emerged. As the volume of data points exponentially increases, "data lakes" emerge as both technology-efficient and cost-effective solutions to managing and leveraging the data. While data lakes offer an exciting opportunity for qualitative and quantitative Big Data projects, pitfalls await those who do not carefully evaluate them for risks.

A High-Level Explanation of Data Lakes

Data lakes are quickly becoming an industry standard as a cost-effective storage architecture that can manage large volumes of data in unstructured form. Data lakes allow an organization to preserve data that the organization currently does not have a use for but realizes there is potential to provide insight into business functions at a later time. Data lakes may contain a large variety of unstructured data. This is in contrast to a data warehouse, a commonly-used method of storing data that requires the data in the warehouse to be structured in a particular way and have a predetermined use, such as data from a transactional system, like payroll, used for the purpose of payroll reporting. Unlike the rigid structure of data warehouses, data lakes enable a user to analyze and utilize the data in novel ways, using more dynamic methodologies.

Opportunities of Data Lakes

Data lakes provide technological efficiencies as well as cost-effective data storage while enabling users to explore data, gaining the ability to create new types of reports that give leaders new perspectives on the organization. In addition, they allow for consolidation of different data sets that have previously been siloed and therefore are difficult to share among different groups who might have use for it.

Utilizing data lakes reduces costs. The savings created by storing data in a data lake are partly due to the fact that the ecosystem most commonly used to evaluate the data is Hadoop, an open source system that can be installed on low-cost hardware. The unstructured format of the data avoids the costs associated with formatting the data.

Organizations most likely to benefit from data lakes are those that create or receive a high volume of data from multiple sources. These organizations will have the ability to extract data not only for regular reporting, but the consolidation of all types of data allows for the creation of new reports by combining different data points not previously associated with each other. In healthcare, for example, all patient encounters, from admission to discharge to billing, generate data. Previously, this data was stored in a structured form in siloes. Through the use of unstructured data in a data lake, data can be combined in new ways and a health care system can see the "big picture" and use it to improve workflow, develop predictive analytics, and improve clinical outcomes.

Issues Related to Data Lakes
Organizations should proceed with caution before integrating data lakes into their systems and should evaluate and weigh the risks of data lakes before integrating a data lake into the IT infrastructure.

**Legal Concerns**

Unstructured data can present particular and unique risks that traditional IT governance policies do not provide for, especially with regard to tracking access to the data lake as well as audit logs. In order to comply with state and federal laws that govern the safeguarding of data, as well as other obligations like litigation holds, management of the challenges of unstructured data is crucial. An organization should review and update its internal IT governance policy to provide for the introduction of a data lake.

Data lakes are an especially attractive target for cyber attacks because of the vast quantity and variety of data they hold. There may be industry-specific laws and regulations for the storage of data, such as the Graham-Leach Bliley Act for the financial services sector, or the Health Insurance Portability and Accountability Act for health care, and those should be reviewed and considered.

**Business Concerns**

Data lakes are only as valuable as those who understand how to process and analyze the data, which requires a particular set of skills. A key component of successfully leveraging the data in the data lake is contracting with individuals who have this skillset to derive value from the data lake. Data analysts and data scientists are required to perform the analysis and transform the data into actionable information that business groups within the organization can use, and employee retention can be an issue.

The return on investment from a data lake may not be realized in the short term. An organization needs to have sufficient resources and capital to sustain a data lake while data is collected and analyzed in order to be a part of the organization’s long-term solution to leveraging Big Data. Organizations are aware of the potential advantages awaiting them in the data they collect, so some IT strategies revolve around storing all data and later determining how to best use it. However, avoiding the creation of a pool of unused data is key. If an organization does not have the vision or resources to leverage the data lake, investing in one could be nothing but a wasted resource.

**Key Takeaways**

Organizations should:

- Weigh the benefits of data lakes as a storage strategy for the organization,
- Consider whether they have the right resources to make use of the data, and
- Evaluate and update current IT security policies to align with the data lake concept.

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The Future of Self-Driving Cars – Legal & Ethical Standpoints
By: Melodie Arian

Today’s society is almost entirely dependent on mobile computing and technology. Whether we want to deposit a check in our bank accounts or catch a taxi to the airport, applications are what we use to run our everyday lives. Self-driving technology is the newest trend that is transforming not only the auto-industry, but also our continued reliance on technology to better our lives.

There is no doubt that self-driving or autonomous cars are the hot new topic in the automotive world. If their highly anticipated rollout thus far is any indication, it’s certain that more and more companies will be releasing cars with, at the very least, some self-driving capabilities in the near future. The benefits are relatively clear: computers don’t drink and drive, they don’t text while driving, they never get sleepy, and they can react exponentially faster than a human in an emergency situation. But other than being safer, these cars will free up that time spent concentrating on the road to allow the driver to be more productive on their journey to work, or simply to relax. If the driver is an attorney on his way to court, the attorney will be able to better utilize the time they would spend driving to prepare for hearing or trial. One vision of the car of the future is something more akin to a living room on wheels, or an office, allowing the occupants to sit together and watch TV while they are driven to work.

While everyone is fascinated by the dramatic enhancement of the auto-industry, few have given attention to the legal implications of self-driving cars. In a traditional auto-accident, it is unambiguous which parties will be held accountable or sued; it could be the driver whose carelessness caused the crash or the manufacturer of the car who defectively designed the vehicle or its parts. But what happens when a self-driving vehicle crashes into a pedestrian, or less drastically, rear ends another vehicle on the freeway?

Given that self-driving cars will ultimately behave according to the algorithms designed by the manufacturers, are these companies then liable if their algorithm behaves in a less-than-ideal fashion? Is it possible to prove, in any given situation, that the self-driving car acted in the best way?

In the case of an unavoidable accident, is it ethical that the car might cause a greater loss of life in order to ensure the protection of its occupants? Or perhaps the opposite may occur, where a vehicle may determine the best course is to avoid the largest loss of life, which could result in the death or serious injury of the car’s occupants. If we imagine a situation where the car has to choose whether to collide with an accident occurring directly ahead or swerving into a small group of bystanders, how does the car decide between these two possibilities, and does the number of bystanders make a difference to the car’s logic? If the choice is between hitting a single person and risking the driver’s life, we can perhaps say it makes sense to try and protect the driver – after-all, they paid for this advanced technology under the assumption that it would help keep them safe. But if instead there were four people, instead of just a single person, does this make a difference? How about 10 people? Is there any number of people which could force our car to abandon its primary objective of protecting the driver?
Some, like Sebastian Thrun, an innovator of driverless cars, argue that it would be less difficult to determine liability because driverless cars are equipped with a video camera that captures data. Others, however, believe that the legal implications of these vehicles are beyond apportioning liability and contributing negligence.

We are only seeing the first few clouds on the horizon of what will seemingly become a vast storm of ethical questions and legal arguments, which will have a huge impact on the way we all commute over the coming decade. In fact, the removal of the human agent being in control of the vehicle gives rise to a host of ethical and legal questions. It is not clear how they should be answered, and there is no way to predict the future of autonomous cars until lawmakers and legislatures create statutory guidance.

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The State of Telehealth
By: Ashley Thomas

By 2018, it is expected the number of patients using telehealth services will expand to 7 million.\(^1\) The revenue for telehealth services and devices is also expected to increase to $4.5 billion by 2018.\(^2\) Forty-two states have proposed some form of telehealth legislation in an effort to increase access to healthcare.\(^3\) In August 2016, the U.S. Department of Health and Human Services (“HHS”) sent a report (“Report”) to Congress providing updates on the current state of telehealth implementation.\(^4\) This article will provide some of the highlights of that Report.

The Report acknowledged the significance that telehealth possesses in increasing access to care and improving health outcomes. With the passage of the Affordable Care Act in 2010, the U.S healthcare system is slowly ushering in a new era of healthcare that is moving away from the traditional fee-for-service model to a system of value-based payments that encourages greater coordination across the care continuum. Telehealth technology holds promise in this new healthcare delivery system. According to the Report, approximately 61 percent of healthcare institutions currently use some form of telehealth and between 40 and 50 percent of all hospitals in the U.S. currently employ some form of telehealth. Telehealth increases access to care for individuals currently living in rural areas. Individuals living in rural areas have higher mortality rates.

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\(^2\) Id.


\(^4\) Id.

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Challenges:

Despite the significant impact telehealth can make in healthcare, there are still many barriers to widespread implementation.

- **Reimbursement.** There is a considerable amount of variability of reimbursement from public and private payers. Medicare provides for reimbursement of telehealth services but includes certain stipulations on the provider and location of the visit. Currently, 48 state Medicaid programs provide some level of telehealth coverage but requirements for full reimbursement differ across the state programs. Thirty-two states have some form of telehealth parity laws, which requires private insurers to reimburse healthcare providers for telehealth services at the same rate as in-person healthcare visits.

- **Licensure.** Currently, there is no federal licensure process to practice medicine for healthcare providers. The licensure process to practice medicine is governed at the state level. The licensure process can be quite onerous and burdensome for healthcare providers. Most state laws on telehealth govern that healthcare providers must be licensed in the state where the patient resides, which poses a significant barrier to providers wishing to practice telehealth across state lines. State licensure has deterred some healthcare providers from adopting telehealth services. The Federation of State Medical Boards has created a model interstate licensure compact for states that allows for a streamlined process for physicians wanting to practice in multiple states. However, this compact is voluntary and only a limited number of states have enacted the compact.

- **Credentialing and Privileging.** Verifying the qualifications of providers utilizing healthcare facilities and defining the scope of services each clinician has authority to render is another challenge to adoption of telehealth. The Centers for Medicare and Medicaid Services (“CMS”) and The Joint Commission have issued clarifications that it is the hospital at which the patient is located that has the ultimate credentialing authority over physicians providing care delivered via telehealth. Some states have their own requirements for credentialing and privileging for telehealth providers. Healthcare providers should review their state requirements.

- **Internet Connectivity.** Some parts of the U.S. (i.e., rural areas) still lack access to sufficient internet connection speeds that may be required for advanced telehealth applications. The Federal Communications Commission (“FCC”) and the U.S. Department of Agriculture (“USDA”) have deployed programs to support internet connection in rural areas and offset high telecommunications costs. However, it’s been a challenge for healthcare providers getting access to these resources due to the application process and level of cost sharing with these programs.

Future of Telehealth:

Given these challenges, HHS concluded the Report by explaining their legislative proposal to expand telehealth services through Medicare. The Medicare Physician Fee Schedule for 2017 (issued prior to the Report) expanded Medicare reimbursement for certain telehealth services, such as advanced care and chronic care consultations. The legislative
proposal is intended to encourage wider appropriate delivery of telehealth services. Despite this legislative proposal, the challenges to widespread adoption of telehealth still remain.

About the Author: Ashley Thomas is an Attorney located in the Raleigh, North Carolina office of Nelson, Mullins, Riley & Scarborough. She is not yet admitted to North Carolina but is admitted to practice in Illinois, Indiana and Missouri. She currently serves as the Co-Chair for the ABA YLD Science and Technology Committee. She may be reached at ashley.thomas@nelsonmullins.com.

NEWS AND ANNOUNCEMENTS

Membership Survey!
Be on the lookout for a membership survey the Committee will be sending out late October/early November. Please fill it out and let us know how this Committee can serve you better.