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Life Can Change in the Blink of an Eye Capstone

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Final Report

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Executive Summary:

Texting and driving is one of the most widespread and uncontrollable of epidemics that have arose to prominence in the 21st century. Texting and driving is now a global issue, that has left nations across the road scrambling to implement new laws and preventative measures to stunt the increasing rates of accidents and fatalities caused by texting and driving. The severity of the issue has lead to a multitude of different entities ranging from domestic and foreign governments, cell phone and car manufacturers, cell phone carriers, and insurance agencies to seek new methods to prevent texting and driving. Determining the current methods used by these entities to address texting and driving and to alter the behavior of drivers was the basis of the research found in this report. The research collected and analyzed in the following sections illustrates the current actions being taken in the fight to end texting and driving. Based off the research gathered, several conclusions will also be drawn pertaining to what the major salient issues are surrounding texting and driving, and recommendations will be given that will provide guidance towards how texting and driving should be tackled locally in Worcester and at the state level.

This report highlights the major efforts to end texting and driving at the federal, state, and commonwealth levels, as well as determines what strides car and cell phone manufacturers, cell phone carriers, insurance agencies, and international communities have made to combat the issue. What is seen across all areas of research is a united consensus about the immense dangers caused by texting and driving, and how there is no one fix all solution to end it. The research shows a variety of avenues which have been taken to end texting and driving. These varying methods have manifested in the development of handsfree and preventative technology within

cars and phones, and has lead to an uptick in strict laws to combat texting and driving at the state level and internationally. What is also found internationally in countries with the most success combating texting and driving is a well-funded and organized education and awareness machine that provides a constant stream of information to the public. These findings put forward a heavy emphasis on the need for strong education and awareness campaigns coupled with increased involvement on the part of insurance agencies and car and cell phone manufacturers to develop and promote preventative technologies that limit the ability of drivers to use their phones while driving.

Based on the information gathered, there are several general recommendations that can be made. The first recommendation is the need for increased awareness and education efforts in Massachusetts pertaining to texting and driving. It is recommended that this be done through pushing for a revision of the Massachusetts Comprehensive Health Curriculum Framework to include a more defined section on public health, road safety, and the dangers of texting and driving. This revision should be coupled with a push for additional legislative action and the implementation of comprehensive law enforcement strategies including penalties for texting and driving violations. Additional long-term goals would be to mandate cell phone manufacturers to establish public awareness campaigns on the dangers of texting while driving, push for the creation of uniform state guidelines on texting and driving prevention, encourage car and cell phone manufacturers to collaborate with technology companies to devise more handsfree and preventative options, encourage the state government to drop the ban on insurance agencies that prevents them from raising premiums due to texting and driving violations, and finally, push for downloaded anti-texting apps/services on all phones that are opt-out as opposed to opt-in.

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1. Introduction:

1.1 Background on the Problem:

Statistics from the U.S. Department of Transportation, highlight that, "10 percent of fatal crashes, 15 percent of injury crashes and 14 percent of all police-reported motor vehicle traffic crashes were attributed to distracted driving---a blanket term that broadly encompasses cell phone use" including texting while driving (Perez, 2017). According to the National Highway Traffic Safety Administration, "every day, more than eight people are killed and more than 1,000 are injured in crashes reported to involve distracted driving" (Wallace, 2017). Boudette (2016) notes that, "after a four-decade decline, the number of highway deaths ticked up last year in the largest annual percentage increase in 50 years" (Boudette, 2016). In 2016, matters became even worse, "from January to June, highway fatalities jumped 10.4 percent from 2015, according to NHTSA. That's 17,775 deaths in the US alone" (Boudette, 2016). Safety regulators are calling the recent spike in distracted driving fatalities a crisis (Boudette, 2016). According to the National Safety Council, in 2016 alone, an estimated 4.6 million roadway users required medical attention, which cost Americans $432 billion dollars (National Safety Council, 2018).

The National Safety Council explains that when one is talking on the phone, the brain can "miss up to 50% of driving environment" (National Safety Council, 2017). Taking your eyes off the road for five seconds going at a speed of 55 miles per hour is the equivalent of driving the length of an entire football field with your eyes closed. Not only is texting while driving dangerous in the moment, the AAA Foundation for Traffic Safety notes that research has also shown that "distraction 'latency' lasts an average of 27 seconds, meaning that, even after drivers

put down the phone or stop fiddling with the navigation system, drivers aren't fully engaged with the driving task" (Nield, 2017).

1.2 Background on the Client and Project:

Life Can Change in the Blink of an Eye Capstone project will focus on the research of laws, programs, and other preventative measures that are currently used to reduce incidents of texting while driving. In addition to assessing what currently exists, this narrative will explore future recommendations for addressing the issue. Joe Early, the District Attorney of Worcester, has contracted the Capstone Team at Clark University to provide a foundation of research upon which further action can be taken to compliment the programs and laws already in place within the city.

The Worcester District Attorney's (DA) Office has a mission of seeking justice through tough and fair prosecutions, and preventing crime with a variety of community-based outreach programs (worcesterda.com, 2018). The DA's Office is committed to serving the people of Worcester County and keeping the communities safe and secure. Mr. Early works with the law enforcement agencies in 60 communities that make up the Middle District. He oversees a law office of more than 80 prosecutors, the operation of 11 District Courts, Superior Court, Juvenile Court, three six-member jury sessions, the grand jury and an appeals division (worcesterda.com, 2018). The DA's office believes that they can better serve their citizens by preventing a crime rather than prosecuting one, which is why they devote much of their resources to progressive community outreach programs. Given the aforementioned dangers and deaths resulting from texting while driving, this project is squarely aligned with the DA's mission to foster safer

communities. The narrative will culminate with suggestions to the client about what steps should be taken to deal with texting while driving in the city of Worcester.

The ultimate goal of our project is to provide the client with a wealth of research, information, and program suggestions which can then be shaped into tangible action, either pursued by the DA's office or a future capstone project team. The deliverables for this project which will be presented as a part of the final presentation will include a comprehensive compilation and overview of all major research findings, a list of best practice laws and programs which were implemented in areas that hold strong similarities to Worcester, anti-texting and driving presentation and PSA material (slogans, program structures, and use of mixed media presentations), and finally, written future recommendations which will aid the DA's office and future capstone teams when it comes to implementing programs. Through the completion of these deliverables, it is the hope of the whole team that we will be able to provide a solid framework upon which the issue of texting and driving in Worcester can be fully addressed.

1.3 Background on the Capstone Team:

The Clark University Capstone team is comprised of a dynamic group of professionals from diverse backgrounds. In addition to the aforementioned deliverables, another added benefit of this project is that each Capstone team member now has extensive knowledge on the issue of texting while driving and can continue to advocate throughout their respective careers. Awareness is an important step towards addressing the issue and we hope to continue to make a positive impact beyond the scope of this project. Below are bios for each of the Capstone team members.

1.4 Bios:

Spencer Pinkney

Spencer is currently employed as a tennis instructor at various clubs on Cape Cod where he has worked for the past 8 years. Received his Bachelor's Degree in Political Science and History from Clark University in May of 2017.

In *Texting while Driving* responsible for:

Project lead, international findings, editing for project charter and final paper, and meeting structure.

Chris P. Rutigliano, Sr

Chris is currently working for the City of Worcester in their Technical Services Department. He is a Senior Technical Support Specialist and has been in that role for five years

In *Texting while Driving* responsible for:

Communication with Client, States, Mass Legislation, PSA and Social Media Campaign

Highness Meena

Currently working for Prestige Adult Foster Care as Managing Director. 12+ years in Healthcare

Management.

In *Texting while Driving* responsible for:

General research and research on phone manufacturers,

Adam Menard

Currently employed at the Central Mass. Regional Planning Commission as an Assistant Planner.

The focus of his position is Disaster Planning.

In *Texting While Driving* responsible for:

Research on Federal and State funding and statistics.

Kristin Humphrey

Kristin is the Mentoring Director for a Boston based organization, Partners for Youth with

Disabilities, where she has worked for the past seven years.

In *Texting While Driving* responsible for:

General research, research on phone manufacturers, trends in the industry, salient issues, and

recommendations; compiling meeting minutes and writing monthly reports.

Philip Brent Gates

Currently volunteers and serves as an appointed official in the town of Grafton. Received an honorable discharge for eight years of service from the United States Army Military Police Corps. Veteran of Operation Iraqi Freedom from 2008-2009. Received Bachelor's Degree in Political Science from Clark University in May 2017.

In *Texting While Driving* responsible for:

Car Manufacturing Research, salient issues, and recommendations and Initial Powerpoint Draft.

Mohamed Ndjikam

Actually Mental Health Specialist Manager at Eliot Community Human Services for 12 years; CEO of Compassionate Home Health Care from 2010 - 2015. Partnering with different NGOs in Massachusetts to tackle health disparities among minorities.

In *Texting While Driving* responsible for:

International findings research and salient issues.

Jillian Elalaoui

Jillian is the Operations Assistant for the Crisis Stabilization Units at Bay Cove Human Services located in Boston, where she has worked for the past 10 years and held various roles such as Housing Manager. She is passionate about the homeless crisis in boston and volunteers for shifts in support of Bay Cove operated homeless shelters.

In *Texting While Driving* responsible for:

Federal Government and Cell phone carriers research, salient issues, and recommendations. Communication with group advisor.

2. Trends In Industry:

2.1 Federal Government:

Currently, in the United States, there is no national ban on texting and/or using a wireless cell devices while driving. A number of states have passed laws banning texting due to the increase safety issues and concerns and instating laws requiring hands-free use of wireless phones while behind the wheel. The Federal government, in general, recognizes the dangers of

distracted driving and views it as an epidemic that has to be dealt with. Congress is currently

considering a number of bills on a national scale that is intended to reduce distracted driving

accidents and related fatalities. In 2011, Congress passed the Safe Teen and Novice Driver

Uniform Protection Act of 2011 or the STANDUP Act, brought to congress by Senator Kirsten

Gillibrand Democratic Representative from New York. This Act gives authority to the Secretary

of Transportation to award incentive grants to States with graduated driver licensing laws that

require drivers younger than age 21 to comply with a two-stage licensing process before

receiving an unrestricted driver's license (Congress.gov, 2011). Another bill, The Distracted

Driving Prevention Act of 2015, brought to Congress by Democratic Representative Engel Eliot

of New York aimed to reduce injuries and deaths caused by cell phone use and texting while

driving. This Act gave authority to states to implement fines, penalties and prohibit handheld cell

phone in general for against all violators. It provides grants to participating states that enacted

laws banning drivers from engaging in numerous dangerous driving practices. These practices

include texting, using a cell phone without a hands-free device, and using any electronic device

for anyone under the age of 18 (Congress.gov, 2015). In 2017 recognizing the dangers of

distracted driving was brought to congress by Democratic Representative Raja Krishnamoorthi.

This particular bill is aimed at reducing instances of impaired driving and prohibits the usage of

cell phones or other communication devices in non-emergency situations. In order for states to

qualify for this grant, they would have to ban texting while driving and are required to impose

significant penalties for drivers who cause accidents due to any type of distractions. The grants

budgets are funded with surplus funds from the existing seatbelt safety programs (Congress.gov,

2017). The research conducted because of these Acts and the increase in fatalities due to the use

of cell phones while driving has led to the announcement of the Road to Zero initiative by the National Safety Council, the National Highway Traffic Safety Administration, the Federal Highway Administration, and the Federal Motor Carrier Safety Administration with the goal of eliminating traffic fatalities within 30 years.

The Federal government fully understands the dangers of texting while driving and has led by example when it enforced new policies affecting nearly 3 million civilian employees and banning them from engaging in any texting while driving activities in connection with any government business. This policy is particularly aimed towards employees who operate government-owned, leased or privately- owned vehicles, and some Federal employees who use Government-supplied electronic devices to conduct government business while on the road. The federal government takes the stance that implementing a government ban will help save lives, reduce injuries, and set an example at the State and local government level, for private employers, and overall responsible individual drivers.

According to the National Highway Traffic Safety Administration (NHTSA) during daylight hours, approximately 660,000 drivers are using cell phones while driving. That creates enormous potential for deaths and injuries on U.S. roads. Teens were the largest age group reported as distracted at the time of fatal crashes. The NHTSA's efforts on texting and driving and other risky driving behaviors is in partnership with the States and local police. The States determine laws affecting distracted driving, but NHTSA provides Federal investments in the locally driven strategies that address the States' specific needs. One of the highlights of this relationship comes during April's Distracted Driving Awareness Month, which pairs a national advertising campaign with a law enforcement crackdown called U Drive. U Text. U Pay.

Reportedly, nearly one-third of all U.S. drivers 18 to 64 years old read or send text or email messages while driving. For every incident, law enforcement investigated the cause of the crash and prosecutors determined whether any driving behavior that contributed to the crash warranted an infraction, a misdemeanor, or a felony. Absent drug or alcohol impairment, mechanical failure, or obvious recklessness, determining what a driver did or failed to do that caused the crash can be challenging. What can law enforcement do to better identify and collect evidence of distracted driving? Were there witnesses to the driver's pre-collision behavior? Is there evidence that the driver knew or should have known of the dangers of the particular distraction? Can we preserve evidence of the distraction? Can we prove the driver's actions in court and can we demonstrate to the jury the unreasonableness of this action? What exhibits are useful? What experts should be sought? Prosecutors may also need to submit a preservation letter to a phone company and should become familiar with what information is available from cell towers, cell phone providers, and from the phone itself. Additionally, prosecutors should consider if there are better ways to educate our jurors, our judges, and our legislators about the dangers of distracted driving. A State may have specific laws against the use of a cell phone or texting while driving. However, laws targeting distraction may also be for any electronic devices. Those laws prohibit devices that can access the Internet or send an electronic message in the vehicle. Therefore, when making a stop and investigating distracted driving, law enforcement officers should recover cell phones, tablets, laptops, video streaming devices, and in-vehicle entertainment systems using current State law and guidance to obtain evidence. Departments must address the specific violation codes serving as the basis for enforcement and understand the State/local judicial interpretation of these codes before sharing the information with the

enforcement officers. It may also be a good idea to meet with judges/magistrates before kicking off an enforcement effort to get their buy-in and interpretation of the distracted driving laws. Detailed report writing and complete documentation of all the evidence can substantially aid in successful prosecutions. In a post-crash investigation, usage of a cell phone or other device can be established through testimonial evidence from the driver, witnesses, and/or participants. A cursory view of the device based on owner consent, or as allowed under law, might reveal the history and status of the device at the time of the crash (National Traffic Law Center, 2017).

2.2 Commonwealth of Massachusetts:

Massachusetts defines high risk transportation system uses as young drivers, older drivers, motorcyclists, pedestrians, bicyclists and school bus occupants. The focus of combating texting and driving is on educating and reducing the usage by young drivers and enforcement of current state laws. Though a potential future research project on pedestrians texting might be beneficial. According to 2015 Fatality Analysis Reporting System (FARS) data young drivers aged 20 years or younger account for 8% in all fatal crashes in Massachusetts.

Commonwealth of Massachusetts Highway Safety Annual Report, Federal Fiscal Year (FFY)2016, has several objectives to combat texting and driving. These objectives are funded by a grant from National Highway Traffic Safety Administration (NHTSA) under Section 402. These grants are award to the Executive Office of Public Safety and Security (EOPSS) Highway Safety Division.

One of the objectives of the Executive Office of Public Safety and Security Highway Safety Division (HSD) for FFY2016 is to increase public awareness of the dangers of distracted driving, mobile device use and texting while driving. This objective was accomplished through

several public media outreach and media campaign's, notably for teen driving there was the '100 Deadliest Days' campaign. EOPSS/HSD funded two grantees in FFY2016, In Control and SADD for educational outreach targeted at young drivers. Another objective for FFY2016 was to educate law enforcement on the identification and citation of offending violators of mobile device laws. This objective was accomplished by EOPSS/HSD calling and emailing law enforcement to cite offenders for breaking the Massachusetts mobile device law. There was an objective to document mobile device use as part of the annual seat belt observation survey. The final objective for FFY2016 was to educate police officers on the importance of noting distracted driving as a factor in crashes. Emails and phone calls were made to municipal police departments.

According to the FFY2016 Annual Report distracted driving fatalities has decreased from 53 in 2013 to 31 in 2014, a 42% decrease. Even though distracted driving trended down in these years it is still a high risk to those on the roads in Massachusetts and around the country. Part of the grant receive by EOPSS/HSD In FFY2016 was given to the Massachusetts State Police(MSP) in the amount of $300,000 to conduct a distracted driver enforcement campaign in April 2016. April is the national 'Distracted Driver Awareness' month. MSP sent three weeks on this mobilization and issued 5,596 citations of which 2,224 were attributed to drivers using mobile devices. Another portion allocated for enforcement of distracted driving laws was $622,00 the funds EOPSS/HSD distributed was much lower than that allocated, $393,117.01. In FFY2015 123 local police departments issued 1,959 tickets for texting and driving, in 2016, 143 departments issued 4,397 citations, more than 55% increase in citations.

In the 2018 Massachusetts Highway Safety Plan specifically noted is the spike in distracted driving related crashes, in 2014 there were 28 related fatal crashes in 2015 there were 61. Only 9% of the reported fatal crashes were attributed to cellphone use. The remaining percentage was related to inattention, carelessness or "lost in thought" distractions. According to the FFY2018 Plan it seems that drivers are simply not paying attention for unknown reasons at the time of a crash. However, the plan goes on to say that if a driver survived the crash it is highly unlikely they would self-report cell phone usage as the last thing they were doing prior to a crash. Distracted driving citations have drastically increased and this may be attributable to the lack of phone related distraction, from 2012-2016 citations increase 3,000%. This increase demonstrates the concerted effort to crack down on the unlawful behavior of texting and driving. In 2012 citations for Electronic Message Send/Receive MGL90 S13B was 1,726 in 2016 there were 8,566. For FFY2018 EOPSS/HSD intends to offer a grant program aimed at young drivers and will include distracted driving as one of its programs. The strategies for FFY2018 has a focus on mobile device use and distracted driving.

Strategies for FFY2018 include, fund the MSP to enforce distracted driving laws. Increase public awareness of the dangers of distracted driving, mobile device use and texting while driving. Educate law enforcement on the identification and citation of offending violators of mobile device laws. Document mobile device use as part of the annual seat belt observation survey. Promote the MPTC's online training for law enforcement on the importance of noting distracted driving as a factor on crash reports. Provide funding to 203 eligible municipal police departments to conduct a local distracted driving enforcement mobilization in April 2018.

2.2.1 State Statistics:

There are currently no Federal laws regarding texting and driving however many states in the United States have passed laws with reference to distracted driving. Only 15 States, District of Columbia, Guam, Virgin Islands and Puerto Rico have enacted hand-held ban for ALL drives. 38 States have banned hand-held use for teen drivers and 21 States have banned hand-held use for bus drivers. 43 States have banned texting while driving for all drivers and can the driver can be pulled over for a primary offence while 4 States the driver can only be pulled over as a secondary offence. (See Appendix: State-by-State Laws and Enforcement)

2.3 Legislation:

In Massachusetts there is currently no hand-held ban however Senate Bill S. 2092 sponsored by Senate Committee on Rules Mark Montigny Chair and Karen Spilka Vice Chair. Members include Eileen Donoghue, James Walsh, Donald Humason Jr. and Virato deMacedo. Malegislature. Gov (2017, June 29).

Senate, June 22, 2017 -- The committee on Rules to whom was referred the Senate Bill to prevent driver distraction and motor vehicle fatalities (Senate, No. 2058),-- reports, recommending that the same ought to pass with an amendment substituting a new draft with the same title,- reports the accompanying bill (Senate, No. 2092) Passed the Senate June 29, 2017 reprinted as amended S. 2103 Malegislature. Gov (2017, June 29)

Read and referred to the committee on House Ways and Means Malegislature. Gov (2017, June 29).

Once the Bill passes through the House Ways and Means the bill is sent to the House of Representatives. After the bill passes through the House it is passed to the Conference committee which consists of 2 democrats and 1 republican House and 2 democrats and 1 republican from the Senate. After the Conference committee approves the bill it is sent back to the Senate floor for a vote (no amendments are allowed, however they are allowed to state their opinion) Same process for the House of Representatives. Once approved the bill goes to Governor Baker's Desk for signature.

We reached out to our State Senator and State Representative requesting a bill to be presented to the house (copy of email is in appendix). This bill will save lives. We did receive a response from Representative Kane, however there was no interest in co-sponsoring a bill. Representative Kane advised us as that if it is a question of incorporating into the Health curriculum than we should turn to the health curriculum framework, which is an optional guideline for high schools teaching health.

We looked into the Massachusetts Comprehensive Health Curriculum Framework and discovered that the framework is outdated and was written in 1999. According to the Framework "The purpose of the Massachusetts Comprehensive Health Curriculum Framework is to provide guidance for Massachusetts school districts in designing local programs to guide the acquisition of the knowledge, skills, and habits needed by students. Comprehensive health education includes health education, physical education, and family and consumer sciences education.

Teachers within these subjects need to work collaboratively with counselors, school nurses, nutrition services staff, other teachers, families, and students from pre-kindergarten through grade 12." Doe.mass.edu (1999, October 1) There is no mention of the education necessary to keep our young drivers safe and as a result there has been a 5.6% increase in the number of deaths from 2015-2016. "The current Health Framework was developed by a committee of Massachusetts teachers of health, physical education, family and consumer sciences, health educators from higher education, physicians, and school nurses." Deo.mass.edu (199, October 1) There was no representation from Public Safety.

While we find it important to approach our legislative leaders, unfortunately changing legislation is a time consuming process. In the meanwhile, the statistics are continuing to climb and people are dying.

2.4 Mobile Carriers:

Our research indicated that many cell phone companies and corporations have the technology to implement restrictions on texting and driving however, no private entities want to be the first to implement these restrictions in fear of backlash and possible loss of profits. The cell phone manufacturers understand the risks of distracted driving and the need for the technological measures to be implemented to prevent drivers from using their phones on the road. Every major cell phone provider offers some sort of application to help prevent texting while driving. The availability of these preventive measures is only half the battle without active implementation.

2.5 Cell Phone Manufacturers:

The number of Americans using cell phones has increased in recent years due in part to technological advancement in the products. The increase in dependence on cell phones has led to an increase in problems associated with using them while driving motor vehicle. (Sundeen, 2007). When assessing solutions to the pervasive, deadly problem of texting while driving, it is important to consider the numerous parties that contribute to the issue, one major contributor being cell phone manufacturers. Reflecting on the role that phone manufacturers play in the problem raises many ethical and technical questions. Questions for consideration include, the level of responsibility manufacturers should have and understanding the technology that currently exists to support the problem as well as the technology could be developed.

While business ethics is often a gray area, many believe that phone manufacturers are responsible for the deaths caused from texting while driving. There have been numerous lawsuits against cell phone manufacturer, such as Apple, that hold the company partially responsible for not implementing technology that could have prevent texting while driving (Lee, 2017).

To that end, "analysts say Apple and other smartphone manufacturers could add technology that forcibly shuts off text messaging and other distracting features for drivers" (Lee, 2017). Despite this potential, as of 2018, "no major smartphone manufacturer has launched technology that forces users to not text while driving" (Lee, 2017).

One reason for the reluctance of implementing technology that shuts down the phone while driving is likely the fear that it may reduce customer sales if such features were forced upon consumers. Profit is often the bottom line for companies, surpassing ethics and public

safety in importance. Further, if one company lead the efforts they would take the risk of losing business, to other manufacturers that have not implemented the changes.

2.6 Car Manufacturers:

In sum, the trend in the entire car industry to resolve the issue of distracted driving is by investing and working with software companies to develop hands free technology to install in every vehicle. For instance, Ford has developed an operating system that can read incoming texts loudly and can also send texts dictated by the driver by voice called Life360 (Mashable, 2011). Life360 is also a popular trend for Ford since it uses a family link technology that has report card that it sends to parents on their child's speed, mileage, etc (Clarke,2016). Similarly, Chevrolet Malibu redesigned some of its 2016 models to help parents limit the volume of audio in the vehicle and set speed alerts on top of reporting teens driving behavior, and so it helps control texting while driving (Clarke, 2016).

Additionally, Nissan has developed a new installation called 'The Signal Shield' which is a compartment that shuts down the cell phone when the driver gets behind the wheel (Brown,2016). This new installation is suppose to be the latest trend in combating distracted driving but particularly, texting while driving. The software company called UVO developed eServices setup in their Kia Cars having a lot of tracking features which helps in combating texting while driving ("Kia Technology," n.d.).

Additionally, General Motors uses a family link technology which helps the parents of teenagers to track their sons or daughters such that whenever the teenager passes some digital barrier, then the parent is notified through text message (Edgerton, 2014). Nissan car manufacturing company has also in the past installed a control called Faraday Cage which blocks

all data and mobile signals into the armrest of the driver. When a driver places the phone into the

box, all messaging is cut when the lid is closed (Campbell & Bradshaw, 2017).

Volvo has also made attempts by integrating the phone into the entertainment system of the car

on top of an installation of voice control so that the driver does not need to take the hands off the

steering wheel (Golson, 2016).

Apart from the motor vehicle manufacturing companies, there are also technology

provider companies which have dedicated themselves to help control texting while driving. One

such company is Cellepathy, a start-up company. Cell pathy has developed a software that makes

a phone to be able to detect when it is being used by a passenger or a driver in a car. The

technology has been used by big corporations to control their employees (Lindblom, 2017).

Aegis Mobility has software called Drive assist that prevent and control text messages when one

is driving (Cohen, 2008).

2.7 Insurance Companies:

There are several very recent trends in the insurance industry that have sprung up as a

result of the increased awareness and consciousness around the deadly impact of texting while

driving. Insurance companies have grown painfully aware of the increase in car accident rates as

a result of texting and driving and now recalculate rates and premiums after a ticket is received

for a texting and driving violation. These increases are tied to state laws and ar treated similarly

by insurance companies as other serious moving violations (Bain, 2017). Interestingly,

Massachusetts is one of only four states in the United States that explicitly prohibits insurance

companies to consider texting and driving tickets when setting premiums, something that has

done little however to prevent overall premiums from rising as a result of the increased number of car accidents that have occured since 2015 (Marquand, 2015). Recognizing the dangers texting and driving represents to the safety of drivers, and to the overall health of their bottomline, insurance companies have begun to explore new methods of disuaiding the behavior among their drivers.

Arity, a sub-unit of Allstate, is currently devising new ways that insurance companies can track cell phone usage through data collection and the accelerometer and gyroscope that are included on most modern smartphones. Arity has already gathered the data of 160 million trips taken by several thousand Allstate drivers, ultimately concluding based on the data that distracted drivers are at far greater risk for accidents than non-distracted drivers and that distracted drivers cost insurance companies 160% more than non-distracted drivers (McFarland, 2018). The current trend therefore, based on the data gathered by Arity and other insurance agencies, is to instigate a behavioral change among drivers so that accident rates will decrease. The current technology utilized by Arity manifests in the form of an app that tracks speeds and data usage while driving, with the intention of basing rates and discounts to rates off whether drivers are distracted or not while driving. The end goal on the part of insurance agencies is to move away from the traditional practice of determine rates based on credit score, and to instead move towards smartphone tracking technology to truly gauge which drivers are safe and which are not (McFarland, 2018). Insurance agencies are now starting the process of gaining regulatory approval from state insurance offices on a state by state basis, with a long-term goal on encouraging drivers to consent to the utilization of the technologies through incentives and discounts to rates (McFarland, 2018).

2.8 International Efforts:

Texting and driving has been the subject of several laws in countries across the industrialized world that are worthy of consideration when determining cases of best practice for Worcester County. Containing similar road conditions and situations to the United States, one of the first regions of note is Europe. In Europe, several countries have taken steps towards discouraging texting and driving over the course of the past decade. In 2017, the United Kingdom put in place laws which made texting and driving a costlier fine than speeding. A first-time offender caught texting and driving will face a steep fine of 200 pounds (about $244 USD) and will receive 6 points against their driver's license (Wallace, 2017). The point system utilized in the U.K. enables courts to place penalty points on a driver's record that can remain on a driver's record for 4 to 11 years. Receiving a total of 12 penalty points over the course of 3 years will result in the cancellation of a driver's license for adult drivers. In regards to new and teen drivers, a total of 6 accrued points over 2 years will result in a revoked license ("Penalty Point Endorsement," 2018). The penalties for texting and driving are more than the 3 received for speeding, setting a precedent for tough action against texting and driving in the U.K.

In Germany, there are now laws in place that are even tougher than the ones seen in the U.K. Currently in Germany it is illegal for any use of a mobile phone without the use of a hands-free device. Mobile phone usage is outright forbidden for all hands-on activities including receiving or rejecting calls, reading, utilizing Mp3 functionality, and of course texting (Hermsen, 2017). The blanket ban of all functionalities is to ensure that those found in violation of the law can make no excuses in regards to their usage, thus ensuring that those on the road are made

aware that without question, all hands-on cellphone usage is banned. Receiving a mobile offence will result in a fine of 60 Euros and the placement of a penalty point on the driver's license (8 are needed to revoke the license) (Hermsen, 2017).

Sweden is the next European country with significant efforts pertaining to texting and driving, arguably attaining the most success with the lowest rate of motor vehicle related deaths out of all high-income countries. The approach in Sweden differs notably from other countries in that it focuses primarily upon awareness and education, coupled with efforts to limit texting while driving through the development of new laws. Recently, a new ban was put in place by Transportstyrelsen (the Swedish Transport Agency) which prohibits the use of hands-on cellphone usage while driving. However, unlike in Germany and the U.K., Sweden favors promoting informationals and tips to drivers about how they can preserve their safety while on the road and using the phone. This includes providing recommendations for hands-free devices, advertising and encouraging the use of "drive mode" on driver's cellphones which turns off the mobile features of phones while travelling over a certain speed or when connected to a car's Bluetooth ("Information for Yrkesforare," 2018). Steps are also taken to educate drivers (particularly young drivers) about the dangers of texting and driving by providing survey and statistic data on their main website and media accounts ("Texting Behind the Wheel," 2017). The government has also explored anti-texting campaigns, with the main one carrying the slogan, "Hands on the wheel, not on the mobile" ("Texting Behind the Wheel," 2017). Efforts taken in Sweden since their first laws on texting and driving in 2013 seem to have had a strong impact, keeping traffic deaths at between 260-270 since 2014 in a country where there are an estimated 5 million cars on the road ("Texting Behind the Wheel," 2017).

Looking closer to the United States, Canada has implemented several laws and regulations with the intention of discouraging texting while driving. Canada utilizes fines along with a demerit system similar to the U.K. and Germany, with fines differing from providence to providence (between $100 - $1,000) and a uniform number of 3 demerits being placed upon the offenders license ("Canadian Cell Phone Law Updates," 2018). An additional fine of upwards of $2,000 can be given to an offender should their usage of handheld devices be deemed an endangerment to others and such a fine would be classified as reckless driving ("Canadian Cell Phone Law Updates," 2018). Canada couples its system of fines with independent education and awareness plans. The most significant groups advertising for more education and awareness is the Canadian Coalition of Distracted Driving which has devised a 15 step action plan that intends to create safer roads with more informed drivers ("Canadian Cell Phone Law Updates," 2018). Some of the most significant components of the 15 step plan includes education, improvements to enforcement, and an increase in available data and research pertaining to text and driving. The coalition gains its legitimacy from the fact that it has representatives from the government, law enforcement, insurance agencies, and research groups that track traffic fatalities in Canada ("Canadian Cell Phone Law Updates," 2018).

The last nation of major interest is Japan, which of all nations has the longest history of attempting to handle texting and driving and distracted driving as major issues. In 1999, Japan passed through the Road traffic Act, within which it was mandated that no driver would be permitted to use a mobile telephone or car phone while driving except for when the vehicle is at a complete stop ("Japan to Ban Cell Phone Use While Driving," 2003). Fines associated with this law are steep, with a guilty driver facing up to a fine of 50,000 yen ($480) or upwards of 3

months in prison depending on the severity of the offence ("Japan to Ban Cell Phone Use While Driving," 2003). In conjunction with these strict, long standing laws, an education and awareness program titled The National Traffic Safety Program was established which organizes every five years in order to spread information pertaining to texting and driving and to determine strategies that can be utilized to further decrease the rates of texting and driving going forward ("IRTAD Annual Report," 2010). The program has been a resounding success in Japan, with its target goal of under 5,500 annual deaths by 2010 being met 2 years ahead of schedule ("IRTAD Annual Report," 2010).

3 Findings:

3.1 Federal Government:

The Federal government encourages a joint effort between local and State entities to increase driver safety. In 2015 the National Safety Council reported some statistical data claiming that 47 percent of drivers, when interviewed, believe it is safe to send a text either manually or via voice-dictation system, 35 percent of teens use social media behind the wheel, or 54 percent of drivers feel pressure from work to drive distracted (Congress.gov, 2015). The National Highway Traffic Safety Administration reports that distracted driving has become a problem affecting all age groups, but especially for younger beginner drivers who use smartphones at a rate over two times higher than any other age groups (Chase, 2014). The federal government understands the dangers of distracted driving especially in teens where the leading cause of death according to the Center for Disease control is motor vehicle crashes (Congress.gov, 2017). As a result, it is slowly striving to implement both public and private

efforts to educate drivers about the dangers of being distracted behind the wheel. It is also pushing for the implementation of industry-led engineering software solutions to reduce fatal crashes resulting from distracted driving and to have the States execute stronger enforcement of distracted driving laws while leading Cell phone manufacturers and corporations to collaborate in paving the way and conducting safety campaigns.

In a study conducted by the National Highway Traffic Safety Administration (NHTSA), statistical data suggests that at any moment during the day 660,000 drivers were actively using a cell phone or manipulating a device while driving (Dominick, 2015). Texting is believed to be the leading cause of accidents among teenage drivers resulting in more than approximately 3,000 fatalities each year. The new cutting edge electronic devices are becoming more and more interactive and require a greater time commitment and continuous attention from users. With the increase in the dangers of distracted driving, the public is in dire need of stricter laws and a call for various government agencies to implement agency-wide regulations. The prime example can be observed when looking at The U.S. Department of Transportation (DOT) led by Secretary Ray LaHood, who pushed to implement regulations to reduce the number of accidents caused by cell phone use while driving. The DOT issued federal regulations addressing distracted driving by all modes of transportation from normal vehicle use all the way to including some more specialized commercial motor vehicle operators transporting hazardous materials. With the increase in popularity of mobile devices and social media addiction, it is clear that an alarming number of traffic accidents are linked to driving while distracted, including the use of mobile devices often resulting in injury and/or loss of life. The NHTSA reported that in 2015, there were 3,477 people killed and an estimated additional 391,000 people injured in motor

vehicle crashes involving distracted drivers (NHTSA, 2017). Due to these increase in fatalities, research conducted by the Federal motor carrier safety administration (FMCSA) has published new rules that restrict texting and the use of hand-held mobile phones by commercial truck and bus drivers while operating a commercial motor vehicle (CMV).

The popular use of cellular phones when examined by meaningful new research and backed by publicized fatalities statistical data has been the driver behind many debates analyzing the role cell devices play in driver distraction in general regardless of age or utility use. The temptation can be too much to resist by drivers even when a valid examination is provided for why texting and driving is dangerous. The Federal government's cautionary message is "One text or call could wreck it all." appears to be ignored by the masses. The federal government is continuously pushing for state, local governments, and private agencies to continue to join efforts to combat texting while driving, especially for those who particularly drive for a profession like commercial truck drivers. Encouraging states to pass tougher laws and raise awareness about the dangers of distracted driving but the initiative is just scratching the surface and still has a long way to go to make a noticeable mark on this deadly behavior.

3.2 Commonwealth of Massachusetts:

Texting is the most alarming distraction. Sending or reading a text takes your eyes off the road for 5 seconds. At 55 mph, that's like driving the length of an entire football field with your eyes closed. Texting refers to all activity in which a driver might look at their phone, use an app, play a game, and/or use social media, among others. You cannot drive safely unless the task of driving has your full attention. Any non-driving activity you engage in is a potential distraction

and increases your risk of crashing. According to the Commonwealth of Massachusetts website for Distracted Driving there are 10 tips for managing driver distractions listed on the website. These are as follows:

1. Turn it off. Turn your phone off or switch to silent mode before you get in the car. Or better yet, put the phone away in a place it cannot be accessed while driving.

2. Spread the word. Set up a special message to tell callers that you are driving and you'll get back to them as soon as possible, or sign up for a service that offers this.

3. Pull over. If you need to make a call, pull over to a safe area first.

4. Use your passengers. Ask a passenger to communicate for you.

5. X the text. Don't ever text and drive, surf the web or read your email while driving. It is dangerous and against the law in most states.

6. Know the law. Familiarize yourself with state and local laws before you get in the car.

7. Prepare. Start your GPS or review maps and directions before you start to drive. If you need help when you are on the road, ask a passenger to help or pull over to a safe location to review the map and/or directions.

8. Secure your pets. Pets can be a big distraction in the car. Always secure your pets properly before you start to drive.

9. Keep the kids safe. Pull over to a safe location to address situations with your children in the car.

10. Focus on the task at hand. Refrain from smoking, eating, drinking, reading and any other activity that takes your mind and eyes off the road.

Though these are good tips and worthwhile to educate the public about, they are not always practical nor realistic to expect drivers to follow these tips. More education more enforcement and even changing the technology is necessary.

There is a budget, for FFY2018, of $1,245,00, of particular note is the $50,000 designated to Educational Outreach to Young Drivers. Young drivers, especially those in their teens and early 20's are more likely to be texting and driving, More outreach and education is needed, especially at the high school level where students are learning to drive and the formation of driving habits are formed. April 2017, which was designated National Distracted Driving Awareness Month, the current "Drive Present" campaign was launched. The campaign stressed the importance of drivers focusing on the road and not their phones. Driving Present is about being engaged in the moment: aware of your surroundings, ready to reach when the situation changes. When you are behind the wheel, you owe it to the people you love to focus only on the task at hand. Why? Because they are counting on you to make it home safe.

According to Brookfield Police Chief Michael Blanchard and President of the Central Massachusetts Chiefs of Police Association, "The CMCOPA (does not have a program that it teaches its towns about texting and driving. I can only speak for Brookfield and it doesn't seem to be that big of a problem here, but it still exists here and most towns. I do think that Drivers Ed and the ads we see on TV do have an impact on texting and driving."

The Town of Grafton's Police Chief Normand Crepeau said, "I cannot speak for all, departments but we apply for grants for specialized traffic enforcement details. One of the grants includes funds for distracted driving. These are federal grants administered by the Executive Office of Public Safety and Security Highway Safety Division (EOPSS – HSD). Of course officers observing drivers texting or not paying attention to the road will stop them and cite accordingly whether or not they are working under the grant."

3.3 Mobile Carriers:

Many cell phone manufacturers can no longer ignore the texting while driving epidemic. The US Department of Transportation notes that the use of cell phones while driving plays a role in 1.6 million auto crashes each year, causing 500,000 injuries and 6,000 deaths (Shamoon, 2016). Despite knowing the risks many individuals still send texts while driving which may reflect a wider cultural sentiment that texting while driving has become the social norm. Accident victims and their families involved have not made much notable progress in lawsuits against cell phone agencies as the cause in texting while driving cases. In our research, we found in our opinion AT&T is leading the way in working with various other agencies such as Goodyear Blimp, IHeart Radio, retail stores and social media providers like Facebook, Twitter, and Instagram to promote their campaign and convey their message of "It Can Wait" (The Associated PRess, 2013). Also, government agencies including the U.S. Department of Transportation, National Highway Traffic Safety Administration, and National Transportation Safety Board are all committed to helping end distracted driving and support the efforts of "It Can Wait" and raise awareness (Cellcontrol, 2013). AT&T is collaborating with the three other major cell providers Verizon, T-Mobile, and Sprint but AT&T forming a driving force behind

this particular campaign. AT&T continues to use first-hand accounts to help voice the severity of texting while driving.

AT&T is one of the leading cell phone manufacturers in the industry actively attempting to combat the texting while driving epidemic. Since 2009 AT&T has continued to pave the way by running ads against texting while driving and continuously improving the preventive applications in an attempt to stop this epidemic. AT&T offers applications such as DriveMode for iPhone, Blackberry, and Android. DriveMode engages automatically when your car is moving faster than 15 miles per hour. DriveMode silences all text alerts blocks incoming phone calls except for individuals on the "allow list" and silences all email alerts as well (Jolly, 2016). This mode does not completely prevent the functionality of a cell phone. AT&T reports it does send pre-configured responses such as "I'm driving, will call you back in a minute"(Luckey, 2018). Those who use this app will still be able to access music, navigation, and selected contacts on your phone. DriveMode does allow the user to turn off the app manually if the need to place an urgent call arises. Another valuable feature offered allows parents to set up notification for the app to inform them when a teen driver disables it. It is also worth noting that 911 is always accessible while using the application. AT&T has started several campaigns centered on the dangers and devastating effects of texting while driving. AT&T has even produced a documentary called "It Can Wait", "Don't Text While Driving Documentary" and another driving documentary called "360 Driving it Can Wait Stimulation" (Ritchel, 2012).

Another cell phone titan, Verizon Wireless, is taking an aggressive stance at lobbying against texting while driving. Verizon is working with interested legislatives to pass federal laws and bans such as requiring drivers to use hands- free devices. Verizon has apps that block texting

while operating a motor vehicle and other apps that encourage the user through a reward system

to not use their cellular device while driving. It is worth noting that Verizon apps to prevent

texting while driving only work with Android and iOS platforms and provide features that allow

that notify parents if the application is turned off at any time. Verizon Cellcontrol app allows

parents to block their teen from sending or receiving messages while driving and disable many

features and services provided by smartphones while the car is in motion such as the use of

camera and email services (Shamoon, 2016). This app is subscription based and caters more to

concerned parents. Another application offered by Verizon has is Drive Safe Mode which

prevents text & email services while driving. Live2Txt is another Verizon smartphone

application that allows users to block incoming texts and calls while operating vehicle. However,

it is not an automated feature and the user will need to manually engage the app prior to getting

behind the wheel to allow the app to respond to a text while you driving and inform the sender

that the person is unable to respond at this time. Drivemode and Drivesafe.ly are also two

cellphone applications worth mentioning offered by Verizon and fully capable of reading

incoming text messages aloud for motor vehicle operators if the vehicle supports it. Another

aspect of preventive measures deployed by Verizon is Safedrive. According to Verizon it is the

reward system created by Verizon that allows the user to accumulate points redeemable at the

Verizon store and won by not using cell phones while driving. The system allows you to earn

these points as long as the driver is traveling over 6 miles an hour and have activated the

application to track and prove the distance traveled you and safe time behind the wheel.

Sprint has also been an active advocate in the campaign against texting while driving. In

2005 Sprint created an educational program against texting while driving. Sprint has two apps

that aim to deter texting while driving: Sprint's Drive First & Sprint's Safely Go. Both these

smartphone applications enable the user to allow texts and calls from three chosen "VIP"

contacts while all others will receive a message stating you are driving and are unable to respond

at the moment (Yin, 2011). Sprint is currently running a campaign in Miami called "The Last

Emoji." The campaign consists of a sculpture where an emoji has been created from a wrecked

car to illustrate the severity of the outcomes of texting while driving. Sprint aims to promote

awareness to "DN'T TXT & DRIVE" (Sprint, 2016).

Another sizable Cell phone provider which currently has usable applications to hinder

texting while driving is T-Mobile. T-Mobile contributes to these efforts by offering two

variations of the app DriveSmart Basic and Plus (Beren, 2016). Both DriveSmart versions

silence all incoming calls and texts. The app sends a customized text response to those sending

texts messages. DriveSmart Plus is a bit more advanced since it automatically detects when a

driver is on the road and sets their phone into drive mode.

Overall, the Countries four biggest mobile services providers have joined forces to

support a campaign against texting while driving. Cell Phone companies such as AT&T, Verizon

Wireless, Sprint, and T-Mobile will be joined by 200 other organizations backing the

multi-million dollar ad campaign started by AT & T called "It Can Wait" (Hall, 2013). This

campaign is unique as it unites rival companies in marketing together against the negative

outcome of their own products when used behind the wheel. The campaign is a

multimillion-dollar campaign geared toward raising awareness of the dangers associated with

texting and driving. The campaign will focus on real-life stories of individuals who have paid the

price and are living with the consequences of texting while driving. The 100-day campaign will

deliver daily messages and personal stories on the importance of not texting while driving and why texting and driving can wait. This campaign is a testament that cell service providers are aware that laws and public education aimed at curbing the behavior are not enough. This particular epidemic has been the topic of discussion and it is no surprise that the dangers of distracted driving can be fatal. Many take it a step further and believe that cell phones are the main cause of distracted driving fatalities. The ongoing issue with texting while driving needs to be addressed more than just by cell service provides, and cell phone manufacturers, to truly impact a cultural change and save lives.

3.4 Cell Phone Manufacturers:

3.4.1 Customer Resistance:

As previously noted in the trends in industry section, one major reason that cell phone manufacturers have not implemented lockout technology to prevent texting while driving is inevitably the fear of losing business. Though it was not a formal or scientific study, the Zebraco did a twitter poll on the issue as a small experiment to learn more on consumer's thoughts around the issue (Lynch, 2016). Specifically, they had a poll for the question "Should Apple, Samsung, and other mobile device manufacturers deploy technology that would prevent you from using your phone while driving?" The poll had 481 responses, of which "30% said 'Yes. Safety First', 49% said 'No. This is overreach, and 21% said 'unsure'" (Lynch, 2016). In addition to these statistics, the comments provided further context on the results and part of the reluctance was due to distrust in the technology itself. For example, one responded commented "no, because I could see it glitching and it not allowing you to use your phone as a passenger" (Lynch, 2016).

3.4.2 Apple:

While no major phone manufacturers have implemented a locking feature interestingly, "Apple has received a patent for developing technology that would lock iPhone functions such as texting when the phone's owner is driving" (Lee, 2017). In general, "companies have taken the position that text-blocking technology is embryonic and unreliable" (Richtel, 2016). Manufacturers have made the argument that they cannot shut down a driver's phone without the potential of turning off a passenger phone by mistake and that such technology could also mistakenly shut down a passengers' phone on a train or bus (Richtel, 2016). The fact that Apple has developed a patent raises even more questions and scrutiny about their responsibility and negligence around the issue of texting while driving. Apple's patent which was developed in 2008, "would be able to sense the location of the phone within the car based on motion and analyzing the scenery through photo or video data" (Lee, 2017).

While Apple has not implemented locking technology, they have made more passive attempts at addressing the issue. For example, in June of 2017, Apple came out with 'do not disturb while driving mode' to help address the issue of texting while driving (Richtel, 2016). This feature also switches off other alerts that tempt people to look at their phones. Apple was relatively late in this feature and Android had already created an auto-reply feature before Apple's came out (Richtel, 2016). Apple also promotes that they are working to address the issue through CarPlay, "which integrates with some cars so drivers can use voice commands to control some functions of the car and the phone, including letting them orally compose text messages and listen to incoming ones" (Richtel, 2016).

Advocacy Requests to Apple

In addition to parent advocates speaking out about Apple's responsibility around the issues of texting while driving, student groups have also pointed out the ways in which cell phone use is a public health issue. In one example, "a student group, called Stanford Students Against Addictive Devices (SSAAD), recently held demonstrations outside Apple's headquarters and its Palo Alto, Calif., store to draw attention to the issue of smartphone addiction" (MacKenzie, 2018). One of the SSAAD leaders, Divyahans Gupta, pointed out that although the "issue was not unique to Apple" the group "chose to target the company because where they lead, other companies will follow" (MacKenzie, 2018). The goal of the advocacy efforts is to help start the conversation, as Gupta explained, "we're reaching out to Apple to say, 'Hey, you could help on this,'" (MacKenzie, 2018). The SSAAD group has research on their website that "shows excessive use of smartphones can have serious implications for people's mental and physical health" (MacKenzie, 2018). One area the group is requesting Apple's help in is to make it easier for users to track how much they are using their phones to gain awareness. As the students explain, "we want Apple to include something like the Health App on every iPhone, except instead of counting steps, it could track how much time you spend on Snapchat or Facebook" (MacKenzie, 2018).

3.4.3 Android:

Similar to Apple, Android has created applications to address the issue rather than building lock out mechanism in to the design of the phones. Specifically, Android has created an application called Safedrive that kicks you off your phone and Android Auto (Walter, 2016).

With Android Auto, once a phone is plugged in it is becomes inoperable, which is designed with the intention of keeping drivers from using any applications on their phone (Ion,

2015; Walter, 2016). Android Auto works by putting information on the car dashboard screen and disables certain functions. Having the information on the dashboard reduces the behavior of completely turning away from driving (Walter, 2016). One barrier, however, is that not all cars are compatible with Android Auto. Another Android application is DriveMode which reads messages and generates an auto reply (Walter, 2016). DriveMode puts the phone "in a do-not-disturb-me state that disables notifications and locks the user in the app until the speed drops below 10 mph" (Walter, 2016). There are also added point incentives, "the more time you rack up behind the wheel, the more points you earn. You redeem those points for various offers" (Walter, 2016).

3.4.4 Samsung:

Samsung has also taken matters into its own hands as the company has launched its In-Traffic Reply app that saves users from replying to messages and phone calls while on the road. Samsung's new In-Traffic Reply app, currently in beta in the Netherlands with a Google Play launch slated for mid-May, 2017 aims to reduce road accidents and ensure user safety by sending out automated responses to calls and messages while the owner of the phone is on the road. The app is similar to S Bike mode available on certain Samsung smartphones in India. The app gets activated automatically as soon as it detects that the user is on road using sensors like GPS and saves users from the trouble of looking at the screen to reply. The app offers various options to users including a default reply ("I'm driving, so I cannot answer at the moment."), a fun, animated response, or their own customized preset message," the company said in its news post. As this app doesn't require user interaction in order to respond to messages, it can prove to be extremely useful to users who are driving. While car drivers will benefit from the app as well,

those users who ride a bike are expected to benefit the most as texting while riding can prove to be fatal and should not be done in any situation whatsoever (Thakran, 2017). The company has yet to confirm how widely available the app will be, although if it is becoming available via the Google Play Store, it does stand to reason that this will be a widely compatible app. In other words, not just a Samsung Galaxy app.

3.4.5 Problems with Choice:

An important trend within all of these examples is that they all require choice and effort on the part of the user. In other words, a consumer needs to opt in to the preventative features rather than having the features built in to the phone which would require users to opt out. Leaving preventative measures for texting while driving up to choice is particularly problematic in light of how addicted many have become to their phones.

Research, such as a study commissioned by AT&T entitled "It Can Wait" sheds light on the physiological ways in which users are attached to their phones. Dr. David Greenfield, founder of The Center for Internet and Technology Addiction and Assistant Clinical Professor of Psychiatry at The University of Connecticut School of Medicine lead the study which further explains the degree and nature of technology addiction ("Are you Compulsive about Texting & Driving," 2014). As Greenfield describes, "we compulsively check our phones because every time we get an update through text, e-mail or social media, we experience an elevation of dopamine, which is a neurochemical in the brain that makes us feel happy" (Lynch, 2016). Dr. Greenfield makes an analogy to gambling, as he describes, "Smartphones are essentially the world's smallest slot machine. Every time you go on your phone, whether to look at a Facebook

update or check your email, you never know what you're going to get and how good it's going to

be" (Murdock, 2015).

Further, in describing the extent of the problem, Greenfield found that " twice as many

people as self-reported cell phone addiction are showing compulsive phone behaviors – with

three-in-four people admitting to at least glancing at their phones while behind the wheel" ("Are

you Compulsive about Texting & Driving," 2014). Many people will admit to the fact that

texting while driving is dangerous and still do it which can further be understood in light of

addiction. Specifically, Greenfield shared that "while over 90 percent say they know texting and

driving is dangerous, many rationalize their texting-and-driving behavior—a classic sign of

addiction" ("Are you Compulsive about Texting & Driving," 2014). Other results of the study

revealed that respondents did not understand it as a problem, as " nearly three-in-ten said they

can easily do several things at once, even while driving" yet Greenfield points out that "many

objective studies show this type of multi-tasking is not possible" ("Are you Compulsive about

Texting & Driving," 2014). Dr. Greenfield described that, "five is the average number of seconds

that drivers take their eyes off the road to send a text. Drivers can safely glance away from the

road for no more than two seconds before putting themselves and others in danger" (Murdock,

2015).

3.4.6 Opting-Out Versus Opting-In:

The addictive nature of phones shape a rationale for building mandatory features in the

design which would require consumers to opt out versus in. In other efforts to create technology

to stop texting while driving, the concern has been raised that not enough people would select the

preventative measure. For example, Paul Atchley, "a psychologist at the University of Kansas who studies compulsive use of texting by drivers, said awareness wasn't enough" (Richtel, 2014). Atchley, believes "the lure of the device is too powerful, to be overcome by awareness of the risks" (Richtel, 2014).

Other examples in behavioral economics also underscores that the approach of opting out is more effective. For example, Thaler (2009) looks at principles of behavioral economics for influencing whether or not individuals choose to become an organ donor. The United States has a lower rate of organ donors than other European countries. In the U.S. "more than 20,000 organ transplants take place every year" yet "demand greatly exceeds supply: in 2006, for example, 3,916 patients died while waiting for kidneys, according to the National Kidney Foundation" (Thaler, 2009). Thaler (2009) explains that one way to increase donations could be to alter the default rules for selecting to become an organ donor. Specifically, Thaler points out that, " most states as well as many other countries, use an "opt in" or "explicit consent" rule, meaning that people must take a concrete action, like going to a public library or requesting and mailing in a form, to declare they want to be donors" (Thaler, 2009). With this approach, there are " many who are willing to donate organs [but] never get around to such steps" (Thaler, 2009). Thaler further shares, "an alternative approach, used in several European countries, is an "opt out" rule, often called "presumed consent," in which citizens are presumed to be consenting donors unless they act to register their unwillingness" (Thaler, 2009). While it may seem like a minor adjustment, "many findings of behavioral economics show that tiny disparities in such rules can make a big difference" (Thaler, 2009). The consent rates in European countries further underscore the ways in which the choice of opting in or opting out is a major factor. For

example, "in Germany, which uses an opt-in system, only 12 percent give their consent; in Austria, which uses opt-out, nearly everyone (99 percent) does" (Thaler, 2009). These examples have important implications on how preventative distracted driving phone features are designed, with the recommendation that any new feature is a default requiring users to opt out versus in.

3.5 Car Manufacturers:

From research on different corporations which are addressing the issue of texting while driving in the United States, the findings are; Ford has developed an operating system that can read incoming texts loudly and can also send texts dictated by the driver (Mashable, 2011). Chevrolet Malibu redesigned in 2016 helps parents limit volume and set speed alerts on top of reporting teens driving behavior, and so it helps control texting while driving (Clarke, 2016). UVO Company has also developed eServices setup in their Kia Cars having a lot of tracking features which helps in combating texting while driving ("Kia Technology," n.d.).

Additionally, General Motors uses a family link technology such as the Life360 app which helps the parents of teenagers to track their sons or daughters such that whenever the teenager passes some digital barrier, then the parent is notified through text message (Edgerton, 2014). Nissan car manufacturing company has also in the past installed a control called Faraday Cage which blocks all data and mobile signals into the armrest of the driver. When a driver places the phone into the box, all messaging is cut when the lid is closed (Campbell & Bradshaw, 2017). Volvo has also made attempts by integrating the phone into the entertainment system of the car on top of an installation of voice control so that the driver does not need to take the hands off the steering wheel (Golson, 2016).

Apart from the motor vehicle manufacturing companies, there are also technology provider companies which have dedicated themselves to help control texting while driving. One such company is Cellepathy, a start-up company. Cell pathy has developed a software that makes a phone to be able to detect when it is being used by a passenger or a driver in a car. The technology has been used by big corporations to control their employees (Lindblom, 2017). Aegis Mobility has software called Drive assist that prevent and control text messages when one is driving (Cohen, 2008). Illume software also introduce iZup, a GPS- based application that prohibits texting and making calls while driving (Jacobs, 2009). Finally, there is the Safe Driving Systems Company which developed Key2SafeDriving which has a combination of software and hardware to help control texting while driving among other things (Miller, 2009).

As far as corporations that provide education to achieve zero levels of automobile accidents and deaths as a results of texting and driving, a company called Impact Teen Driving offers several free training resources to first responders, educators, parents, community members, healthcare professionals, teens and teen advocacy groups as a measure to ensure resources reach their target audience quickly (Asbridge, Brubacher & Chan, 2012). What is significant about this corporation is that it aims to engage citizens who are of the driving age in a sort of grass roots framework. Through which they can access manifold the free online material and one on one training sessions in order to make meaningful behavior changes in driving habits in the communities they live in (McDonald, & Sommers, 2015).

3.6 Insurance Agencies:

Currently, insurance agencies are in a period of transition. As more and more technologies have made their way into the hands of drivers, accidents, deaths, and the costs for insurances companies have all increased. Insurance companies, more than most, are collectively desperate to seek new means to monitor and address driver behavior as it is the insurances companies that have been taken the heaviest financial cost with the sharp increase in accidents. It is the current practice among insurance agencies, particularly the largest national agencies, to invest money in the research and development of new technologies that can be utilized to alter driver behavior (McFarland, 2018).

The primary focus on the part of insurance agencies is the development of meaningful punishments and incentives that they can fully utilize to improve driver awareness and safety while on the road. These punishments and incentives stem from the implementation of technology among drivers that enables insurance agencies to track speed and data usage among drivers. The system is of course one that requires the consent of the drivers and so the development of discounted rates and incentives for utilizing the technology will be used by insurance agencies to encourage more and more drivers to opt into the technology (McFarland, 2018). An immediate concern in Massachusetts is the fact that insurance companies are currently prohibited to increase rate and premiums based on moving violations pertaining to texting and driving or distracted driving (Marquand, 2015). Insurance companies will ultimately need to seek the approval of the states in order to begin using their newly developed technologies, something that could receive backlash or resistance from the state, as well as from those fearful of insurance companies trying to monitor their driving habits.

3.7 International:

Based on the Information gathered from nations with road and texting and driving conditions similar to the United States, there are several key factors that are consistent throughout all regions. The first consistency is the widespread acceptance on the part of the international community that texting and driving is an epidemic that needs to be addressed. Tough fines and penalties have been a consistent throughout all regions, with Canada, the U.K. and Japan exhibiting some of the toughest fines and additional ramifications including marks against one's license in the case of Canada and the U.K. and a possibility of up to 3 months in jail in Japan. From the legal perspective, the stance is clear across the industrialized world, texting and driving is considered a violation and to be caught doing it will result in consequences. However, fines and strict law alone have been shown to have little significant results when it comes to reducing vehicular fatalities and limiting texting and driving. The most significant results have in fact been found in Sweden and Japan which couple stricter laws on texting and driving with both countries investing heavily in education and awareness campaigns. Such an endeavour has proven to have meaningful results, with traffic fatalities in Sweden dropping from just over 500 in 2013 (the year new texting and driving laws and awareness campaigns were implemented) to only 254 traffic deaths in 2017 ("Texting Behind the Wheel," 2017). Japan has put forward similar measures, with traffic fatalities dropping dramatically from 7,702 in 2003 (the year the National Road Safety program was implemented) down to just 3,904 in 2016 ("Traffic Deaths Fall Below 4,000," 2017). The numbers in both instances are clear,

laws against texting and driving are most significant when coupled with comprehensive texting and driving awareness campaigns.

The most successful efforts have manifested in the form of campaigns utilizing adspace, informationals and slogans, and a multi-layered approach to education. This multi-layered approach as exhibited in Sweden and Japan means tackling road safety and texting and driving at various levels of society including at schools, local communities, driver's license schools. automobile manufacturers and at the government level ("Toyota Safety Measures in Japan," 2016). Each level takes responsibility for a different aspect of the awareness and education component, with schools providing social and moral education of road safety, local communities educating those in the community about local road dangers and texting and driving, driver's license schools highlighting and enforcing all relevant road laws, automobile manufactures advocating for new technologies to reduce ability/dangers of texting and driving, and the government effectively informing people about tips and guides to engage in safe driving ("Toyota Safety Measures in Japan," 2016).

3.7.1 Chart Representing Each Layer of Education and Awareness:

Level	Role
Schools	Teach social responsibility and moral education.
Local Communities	Bring awareness to dangerous habits or areas in community.
Driver License Schools	Teach traffic law and proper driving tools and skills.
Automobile/Cell phone Manufacturers	Educate buyers on danger prediction functions and prevention tools.

Government	Safety and awareness campaigns, provides tips and options to encourage safe driving.

4 Salient Issues:

4.1 Federal Government:

The Federal and State governments have responded to the growing public safety issue evolving around texting while driving with policies and laws. However, these particular policies and laws are not efficient according to many of our research findings. We conclude that a better comprehensive and more effective approach is still needed to make a positive impact. The Federal government has issued restrictions on the use of electronic devices while driving by federal employees hand in hand with guidelines and recommendations but all are simply still not enough! Currently, no state has an implemented a total ban on the use of personal electronic devices on the road. When examining past safety campaigns such a drinking and driving and the use of seat belts we concluded that these particular campaigns became successful only when driver behavior has been altered. These past campaigns adopted a "three Es" approach of Enactment of a law, Education of the public about the law, and rigorous Enforcement of the law (Chase, 2014). We believe that adopting the three E's approach in conjunction with strict regulations of in-vehicle electronic devices use and the employment of preventing technology to limit the use of electronic devices while driving is needed to positively modify driver behaviors and effectively reduce distractions and increase drivers focus. The Federal Government provides money to the states to fund various traffic safety programs.

4.2 Commonwealth of Massachusetts:

Massachusetts receives grant funding from the NHTSA each year. This funding must cover many different areas of vehicular areas of safety. Unfortunately, with this limited funding not enough does towards educating youth about the hazards of texting and driving. In 2016 only $50,000 went to education for young drivers in the entire state and the funds went to two organizations, SADD and In Control Family Foundation. More funds should be allocated to educate young and new drivers. Also, funding was given to municipalities to specifically enforce distracted driving. In 2016 $393,117.01 out of $622,500 was spent by local police departments, too much allocated funding was not spent and as such had to be returned to the federal government. Unspent funding is unacceptable, better management is required for this grant program and more outreach to municipalites is necessary, some departments might not be aware funding is available. Outreach is a pivotal part of any grant program, further prioritization on the spending and allocation of funds should occur and better oversight by the undersecretaries and politicians.

4.3 Mobile Carriers:

The Associated Press reported, many of the cell phone providers state that drivers who read or write text messages while driving are 23 percent more likely to be involved in a car crash than other safe drivers. Cell phone providers such as Verizon, T-Mobile, Sprint and AT&T offer apps that assist with cell phone distractions while driving (Associated Press, 2013). Cell phone providers such as Verizon, T-Mobile, Sprint and AT&T offer apps that assist with cell phone

distractions while driving. However, many of the applications are either not offered to consumers for free and/or are not compatible with all phone carriers. Also, many of the cell phone providers' applications allow the user to designate a few individual contacts that are allowed to text and call for emergencies even when the app is in use. It is common knowledge that we as responsible citizens shouldn't text and drive. Further, the existing research concludes that using a wireless phone while driving degrades driver's performance regardless if it is a hands-free or hand-held wireless device. It appears that cell phone carriers mean well and are positively attempting to impact on this problem but unfortunately they are not taking the right sufficient harsh approach since none of them want to be the first to enforce harsh standards and possibly lose business.

4.4 Cell Phone Manufacturers:

The root of the texting while driving issue begins with the device that causes the problem in the first place: the cell phone. While there are many facets to consider for addressing this problem and stakeholders that could help alleviate it, cell phone companies arguably play an important role. One major issue is the fact that cell phones are addictive and many people compulsively check them, even when they are driving. As Dr. Greenfield describes, "we compulsively check our phones because every time we get an update through text, email or social media, we experience an elevation of dopamine, which is a neurochemical in the brain that makes us feel happy" (Lynch, 2016). With the knowledge that people are compulsively checking their phones and that deaths related to texting while driving are on the rise, there is a need for

proactive solutions from cell phone manufacturers. The technology to shut off phones while driving exists, however, none of the phone manufacturers have implemented such technology (Lee, 2017). Instead, the trend of cell phone manufacturers is to support applications that prevent texting while driving such as: Apple's "do not disturb while driving mode"; Android's Safedrive and Android Auto ; and Samsung's In-Traffic Reply application. While these applications are steps towards prevention, a major shortfall of this approach is that it puts the onus on the consumer rather than on the phone manufacturers. Therefore, many consumers may not make the choice to use this tools, which is apparent from the fact that cell phone use leads to 1.6 million crashes each year (Richtel, 2016).

4.5 Car Manufactures:

The issue of texting while driving has been a major safety concern in the recent past and every effort is being put to find a solution to this problem that has claimed so many lives. According to Gotfryd and Vannette (2016), texting while driving is the primary cause of what is known as "distracted driving" and it is being referred to as "American epidemic." Close to 98 percent of the drivers, confirm that text while driving is a hazardous thing and 74 percent are believed to be texting while driving at some point in time (Gotfryd & Vannette, 2016).

This has led to the numerous efforts that car manufacturers and startup companies on how to solve the problem. There are different types of a hands-free technology system that is always installed into the car (Klayman, 2014). Companies such as Ford, General Motors, and Nissan among many others have introduced various devices that are intended to help solve the problems caused by texting while driving. For instance, Ford developed an operating system called

Life360 that can be used to read incoming texts loudly and at the same time send text through

dictation (Muller, 2010). In that case, the driver is not expected to read incoming text or even

have to text back in reply as the operating system does that on their behalf. Ford and General

Motors have also introduced Life360 because of the family link technology that helps parents

track their children and will always be notified if a child passes a given barrier (Edgerton, 2014).

Even with the advanced technologies that are being introduced to help solve the problem

of texting while driving, there are particular concerns. For instance, the new warning systems

that use illuminated icons, vibrations, and sounds to notify drivers about any potential threat such

as when there is sudden ahead brakes by the car ahead (Muller, 2010). However, these increasing

numbers of warnings in the cars can overwhelm the driver and become a problem like texting

while driving. Having several warnings in the car is in itself a distraction like what is being

solved. For instance, when the notifications in the vehicle are trigger at the same time, the driver

can become confused on what to answer or sometimes a driver may choose to ignore some vital

warnings hoping that the car will evade them (Read, 2017). It is evident that technology can

solve the problem of text while driving but it can as well be the cause of many deaths on the

roads.

The Signal Shield introduced by Nissan notes is merely a concept and chances are that if

it is introduced it will still not reduce distraction (Brown, 2016). Drivers driving at night will

have to put the phone in the signal shield when the driver slid behind the steer wheel. There is no

guarantee that the hands free devices used in texting or making calls and it is not correct to

presume that such devices are safer alternatives. Thus, even the device being released by Nissan

does not offer much of a solution to the problem of texting while driving but instead more

distraction is likely to be created (Brown, 2016). These are some of the salient issues that must be addressed even as solutions are being sought to end or reduce the rate of texting while driving and subsequently end or reduce the number of deaths as a result.

In conclusion, technology advancement is prevalent in the car manufacturing industry due to the continued changes in consumer desires. The automobile manufacturers and legislators have come up with ways of solving distracted driving epidemic leading to the introduction of hands-free devices that allows receiving and sending of text without drivers removing their hands from wheels (Brown, 2016). However, there is no guarantee that the hand's free devices are the solution to distraction as there are numerous other warning devices in the contemporary cars. Increasing the number of such devices in the car is likely to increase the level of distraction instead of solving the problem of texting while driving. This is the greatest concern that needs to be focused on even as more car manufacturers continue to look for viable solutions.

4.6 Insurance Agencies:

There are several salient issues for insurance agencies that must be addressed. The current method of using credit scores to set premiums is an outdated practice that insurance companies are aware needs to be addressed. Currently, insurance agencies lack the legal means to accurately gauge driver behavior and thus, have no means to encourage certain driving habits and punish other, more risky driving habits. The need to continue to develop app technologies that can determine speed and data usage among drivers while in the car is immediate, as such technologies can be a step towards encouraging drivers to leave their phone completely alone while driving. The key issue with this technology is the perception of the public in regard to its

implementation. Most drivers would understandably not want their insurance agency monitoring their driving habits. However, by making it an opt-in option that comes when strong incentives such as discounted rates, it could encourage more and more drivers to start utilizing the app (McFarland, 2018).

Ultimately, for insurance agencies it comes down to their ability to market their apps and incentive program successfully. However, more immediately, insurance companies must push to seek the approval of individual states to implement this program, thus giving it the legitimacy it needs (McFarland, 2018). Specifically within Massachusetts, insurance companies are severely limited by the fact that they are unable to raise premiums if a client commits a texting and driving violation (Marquand, 2015). Due to the fact that insurance agencies are more restricted in Massachusetts than they are in most other states when it comes to adjusting premiums based on driver behavior, it will inevitably be an issue for insurance agencies to try to implement this new addition to their policy should those restriction remain in place.

4.7 International:

From the international perspective, texting and driving is viewed as an epidemic, and it is clear that there is no clear international consensus on how best it should be addressed. Many countries like the U.K. and Germany have addressed the issue solely from a law enforcement perspective, creating a system of fines and punishments designed to keep texting and driving off the road (Wallace, 2017). There are only a handful of nations, such as Sweden and Japan, which have mixed laws against texting and driving with extensive education and awareness campaigns. Law enforcement alone has not been enough to solve to issue of texting and driving, with

accident rates across the United States, the U.K. and Germany either stagnating when compared to countries that implement education and awareness initiatives (Chen, 2016). The pressing issue therefore for most countries is the dire need to implement comprehensive and well funded campaigns that raise awareness for the danger of texting and driving.

Radiating from the issue of a lack of proper education and awareness efforts, is the failure to implement proper education and awareness initiatives. In Canada for example, the primary education and awareness efforts are implemented by the Canadian Coalition on Distracted Driving through its 15 step plan ("Canadian Cell Phone Law Updates," 2018). The major issue with this plan is that it fails to take into account the multi-layered approach to education and awareness that has been so successful both in Japan and in Sweden. It is the multi-layered approach that seeks to push education and awareness to all levels of society, presenting to all drivers not just the facts and dangers, but also presenting road safety and texting and driving prevention as a moral responsibility of all people ("Toyota Safety Measures in Japan," 2016).

5 Summary and Conclusions:

Overall, there have been major efforts made across all the area highlighted in this report in regards to addressing the issue of texting and driving. However, it should be noted that all of the efforts listed are largely independent from the others, and thus, lack the cohesiveness necessary to bring about a real change to the prevalence of texting and driving. What can be seen from the research is the need to address texting and driving across all levels of society and through all approaches including law, education and awareness, and technology. Our final recommendations take into account all of these approaches, and provides recommendations

across the areas detailed in this report including federal and state action, the role of car and cell phone manufacturers, cell phone carriers, insurance agencies, and what steps other nations have taken in response to texting and driving.

Based on our findings on federal and state action, we recommend that the first course of action should be mandated legislation. Federal laws, although do not force states into passing local laws, but nonetheless conform a course of action. We think it would be beneficial if legislators pass it into law that cell phone companies are mandated to include distracted driving apps into their initial application line up offered without the consumer's ability to delete it. Also, since these apps have an associated cost, a small flat fee should be added to mandate monthly billing set by federal laws to offset the cost for cell phone companies. Perhaps a government funded initiative may even be more beneficial to the cause and can foster a spirit of cooperation by all stakeholders. Such funding can be temporary and we recommend at least 5 years minimum. We believe that the main benefit of this action is to eliminate the need for cell phone companies to force these apps on consumers since they are all concerned about losing market share if they implement such safety measures. Putting it in the hand of legislators will ultimately shift the blame to the federal government and would leave no choice for cell phone companies except to comply. Such actions can be also implemented on the state level as well. However a nationwide federal law would be more beneficial in setting the stage for a nationwide change.

Another recommendation we suggest is involving the car manufacturing sector. There has been many changes in the recent years to increase vehicle safety and make certain safety features a mandated minimum. For example, it is now required for all automotive manufacturer to equip vehicles with a backup camera system. The same can be applied to a texting and driving

disabling systems that can be a required safety feature in all future manufactured vehicles. Such systems will either sink with cellphone use or require the user to employ hand free technology already available and in use in the marketplace, or provide cell phone companies with a way to verify the mobility of the user and disable texting features. Although such technologies come as an added cost but the same can be said about backup cameras. If such laws are passed, these costs will be uniformed sunk costs across the board and will provide all drivers with the technology need to operate hands free. Such measures can be very effective when consumers do not have to elect if they are willing to purchase hand free technology when a new vehicle is bought. Naturally, if a vehicle is equipped with such technology, often times more than not, drivers will elect to use it. In turn, these mandated safety measures can reduce texting and driving. Such initiative will have to be driven by federal laws and perhaps enlist the involvement of agencies such as National Highway Traffic Safety Administration. An emphasis on how these funds are spent at the state level should be further prioritized toward texting and driving education and enforcement. U.S. DOT and NHTSA are in their 5th year of the annual U Drive. U Text. U Pay. Campaign as a national program it is a great effort but, more funding and education is needed at the local level.

In regards to mobile carriers, our recommendations would be to make all applications provided by the cell phone carriers compatible with every type and brand of phone providers carry regardless of cost. We believe the apps should be free of charge and should be a standard feature to the cell phone industry. Drivers using phones would need to opt out of using the app while driving if desired. We also suggest that the mobile device industry continue to collaborate with automotive industry, perhaps even join forces in sponsoring campaigns and technology

development geared toward eliminating the need to use a mobile device while behind the wheel. Our research suggests that all involved industries possess various levels of practical usable effective technologies but yet still stall its uses in favor of monetary gains, market share, customer satisfaction, and in complete disregard to public safety and the common good of society.

Based on the addictive principles of cell phones, the magnitude of the issue of texting while driving, and the demonstrated ability to design phones with more protective features, we recommend cell phone manufacturers implement measures that shuts phones down while driving. In this design, we recommend that users have to opt out of the function (intentionally turn it off) rather than opt in (turing it on). Given that the fear of losing customers is undoubtedly a major concern for manufacturers we also recommend that more advocacy efforts take place. The more consumers demand action from cell phone manufacturers, the more likely it will be that changes are made.

We recommend that it should be the responsibility of cell phone manufacturers to invest more on technology research that are designed to prevent texting while driving. Deborah Hersman a former board member of the US National transportation Safety Board who served as its 12th chairperson 2009-2014 stated that "the technology exist- we just don't have the stomach to implement it" she added " the technology got us into this situation, technology should get us out" (Richtel, 2016). Even as the technology exists David Teater a former National Safety Council member now a private safety consultant on road safety, who lost his son to a distracted driver was concerned that manufacturers feared the consequences of implementing technology that can cut off services while driving - meaning the loss of customers to competitors. No one

wants to be the first to block texting while driving (Richtel, 2014). As the technology is already on the market, uniform, federal and state legislation can impose restrictions on manufacturers who do not provide cell phone lockout mechanism and block certain apps while driving and build products that should cut down on distractions. Through legislation, cell phones manufacturers should be mandated to protect the public from danger associated with texting while driving by increasing public awareness campaigns.

Falling in line with our suggestions for cell phone manufacturers, we similarly suggest pressuring car manufacturers to develop and utilize technologies in their cars that limit the prevalence of distractions a driver can experience while in their vehicle. While handsfree integration has been the go to method, other avenues of reducing distraction should be explored. The ultimate aim is to emphasize to car manufacturers that the development of new preventative technologies on their end will make them apart of the solution. The pressures of legislation on car manufacturers would hopefully further spur more research and development on the part of all car manufacturers operating in the United States, aligning them with cell phone manufacturers and providers as a collective group working to devise new preventative technology.

When it comes to insurance agencies, our recommendations are focused primarily upon the existing restrictions they are burdened with when it comes specifically to texting and driving. Due to Massachusetts restricting insurance agencies from raising rates based on any texting and driving violations, it makes it even more difficult for said agencies to implement new policy or technology that specifically punishes those who text and drive. It is therefore the recommendation of this group that pressure be put on the Massachusetts legislature to review restriction on insurance agencies and consider enabling insurance agencies to being rolling out

new policies for rates centering not around credit score but instead on safe driving practices as determined by the distracted driving apps they have been working on. While this would be a difficult thing to push in the legislature, we recommend it be argued as a policy that simply as an option that clients of insurance companies can opt into with the potential benefit of lowering their rates should they display responsible driving.

Lastly, from the international perspective we put forward two major recommendations. The first is the need for properly funded and mobilzed education and awareness campaigns that come directly from the federal government. As seen in both Japan and Sweden, such efforts have had remarkable results, and stand as the only factor that separates the successes of both countries from the failures of so many other countries that fail to adequately mobilize and fund education and awareness efforts on texting and driving. The second, and the most significant, recommendation is to pressure the Massachusetts state government to consider the implementation of a multi-layered approach to education and awareness. As highlighted through our research, this model acts as the best means through which to target and motivate social and technological changes to the way in which society treats texting and driving. This type of approach holds the capacity to have immense success in Massachusetts, and its successful implementation here could motivate other states to adopt a similar approach to education and awareness on texting and driving.

6 Appendix:

Letter to Senator Moore and Representative Kane. (2018, April 2nd)

Good Morning Senator Moore and Representative Kane, We were wondering if the two of you would be interested in co-sponsoring a bill to promote the education of texting while driving and distracted driving in High School Health Class. Currently new drivers' only exposure to the dangers of distracted driving come from the news, PSA's and Drivers Ed. Most public schools in the commonwealth do not teach drivers ed and the public have to go to private driver ed schools which are very expensive. Some new drivers do not take private drivers ed due to the high cost. We feel it would be in the best interest of the public to incorporate/ make mandatory a curriculum at the public high schools through their health classes that focus on distracted/texting while driving education and awareness. This bill would help the underprivileged that can't afford drivers ed to be become better educated on distracted/texting while driving.

Letter to Jeffrey Riley (2018, April 12th)

To: Jeffrey Riley, Commissioner of Elementary and Secondary Education.

Commissioner Riley,

I represent a group of eight students from Clark University currently working on a Capstone project titled, Texting and Driving: Life can change in the blink of an eye. We are trying to bring awareness to the dangers of distracted driving/texting while driving specifically within the Commonwealth of Massachusetts. From 2015-2016 according to the National Highway Traffic and Safety Administration there has been a 5.6% increase in traffic deaths. According to the Insurance Institute for Highway Safety and Highway Loss Data Institute, "the fatal crash rate per mile driven for 16-19 year-olds is nearly 3 times the rate for drivers ages 20 and over. Risk is highest at ages 16-17. In fact, the fatal crash rate per mile driven is nearly twice as high for 16-17

year-olds as it is for 18-19 year-olds." We approached our State Representative for assistance in creating a bill to educate of young drivers and she referred us to the Massachusetts Comprehensive Health Curriculum Framework. After further review we discovered that Health Curriculum Framework is not a mandatory framework but a guideline for schools to follow and incorporate into their own curriculum. The curriculum makes no mention of the dangers of distracted driving. Currently new drivers' only exposure to the dangers of distracted driving come from the news, PSA's and Drivers Ed. Most public schools in the commonwealth do not teach drivers ed and the public have to go to private driver ed schools which are very expensive. Some new drivers do not take private drivers ed due to the high cost. We feel it would be in the best interest of the public to incorporate/ make mandatory in an updated Massachusetts Health curriculum Framework at the public high schools through their health classes that focus on distracted/texting while driving education and awareness. "The current 1999 Health Framework was developed by a committee of Massachusetts teachers of health, physical education, family and consumer sciences, health educators from higher education, physicians, and school nurses." There was no representation from Public Safety. The Curriculum is outdated and needs to have Public Safety input. Are there any immediate plans to have the Massachusetts Comprehensive Health Curriculum Framework? If yes, can you elaborate, if no, is there a reason why? Our study is showing that education is one of the best preventative measures to help save teen lives.

State-by-State Laws and Enforcement on Texting and Driving

States	Hand-held ban	All cell phone ban	Texting ban	Enforcement	Crash Data Collection

Alabama	No	Drivers age 16 and 17 who have held an intermediate license for less than 6 months.	All drivers	Primary	
Alaska	No	No	All drivers	Primary	Yes
Arizona	No	School bus drivers; Learner's permit and provisional license holders during the first six months after licensing (effective 6/30/2018)	No	Primary: cell phone use by school bus drivers	Yes
Arkansas	Drivers ages 18 to 20 years of age; school and highway work zones	School bus drivers, drivers younger than 18	All drivers	Primary: for texting by all drivers and cell phone use by school bus drivers.	Yes

California	All drivers	School and transit bus drivers and drivers younger than 18	All drivers	Primary: hand held and texting by all drivers.	Yes
Colorado	No	Drivers younger than 18	All drivers	Primary	Yes
Connecticut	All drivers	Learner's permit holders, drivers younger than 18, and school bus drivers	All drivers	Primary	
Delaware	All drivers	Learner's permit and intermediate license holders and school bus drivers	All drivers	Primary	Yes
District of Columbia	All drivers	School bus drivers and learner's permit holders	All drivers	Primary	Yes
Florida	No	No	All drivers	Secondary	Yes
Georgia	No	School bus drivers. Drivers	All drivers	Primary	Yes

		younger than 18.			
Hawaii	All Drivers	Drivers younger than 18	All Drivers	Primary	
Idaho	No	No	All Drivers	Primary	Yes***
Illinois	All Drivers	Learner's permit holders younger than 19, drivers younger than 19, and school bus drivers	All drivers	Primary	Yes
Indiana	No	Drivers under the age of 21.	All drivers	Primary	Yes
Iowa	No	Learner's permit and intermediate license holders	All drivers	Primary: for all offenses (effective July 1, 2017).	Yes
Kansas	No	Learner's permit and intermediate license holders	All drivers	Primary	Yes
Kentucky	No	Drivers younger than 18,	All drivers	Primary	Yes

		School Bus Drivers.			
Louisiana	No	School bus drivers, learner's permit and intermediate license holders, drivers under age 18	All drivers	Primary	Yes
Maine**	No	Learner's permit and intermediate license holders	All drivers	Primary	Yes
Maryland	All drivers, School Bus Drivers.	Learner's permit and intermediate license holders under 18. School bus drivers.	All drivers	Primary	Yes
Massachusetts	Local option	School bus drivers,	All drivers	Primary	Yes
Michigan	Local option	Level 1 or 2 license holders.	All drivers	Primary	Yes

Minnesota	No	School bus drivers, learner's permit holders, and provisional license holders during the first 12 months after licensing	All drivers	Primary	Yes
Mississippi	No	School bus drivers.	All drivers	Primary	Yes
Missouri	No	No	Drivers 21 years or younger.	Primary	
Montana	No	No	No	Not applicable	Yes
Nebraska	No	Learner's permit and intermediate license holders younger than 18	All drivers	Secondary	Yes
Nevada	All drivers	No	All drivers	Primary	Yes
New Hampshire	Yes	Drivers younger than 18	All drivers	Primary	

New Jersey	All drivers	School bus drivers, and learner's permit and intermediate license holders	All drivers	Primary	Yes
New Mexico	Local option	Learner's permit and intermediate license holders.	All drivers	Primary	Yes
New York	All drivers	No	All drivers	Primary	Yes
North Carolina	No	Drivers younger than 18 and school bus drivers	All drivers	Primary	
North Dakota	No	Drivers younger than 18	All drivers	Primary	Yes
Ohio	Local option	Drivers younger than 18.	All drivers	Primary: for drivers younger than 18.	
Oklahoma	Learner's permit and intermediate license holders, school	School Bus Drivers and Public Transit Drivers	All drivers	Primary	Yes

	bus drivers and public transit drivers				
Oregon	All drivers	Drivers younger than 18	All drivers	Primary	Yes
Pennsylvania	Local option	No	All drivers	Primary	Yes
Puerto Rico	All drivers		All drivers	Primary	
Rhode Island	Yes	School bus drivers and drivers younger than 18	All drivers	Primary	Yes
South Carolina	No	No	All drivers	Primary	Yes***
South Dakota	No	Learner's permit and intermediate license holders	All drivers	Secondary	Yes
Tennessee	Drivers in marked school zones (effective 01/01/18)	School bus drivers, and learner's permit and intermediate license holders	All drivers	Primary	Yes

Texas	Drivers in school crossing zones	Bus drivers. Drivers younger than 18	All drivers (effective 09/01/2017)	Primary	Yes
Utah	See footnote*	Drivers under the age of 18	All drivers	Primary for texting; secondary for talking on hand-held phone	Yes
Vermont	All drivers	Drivers younger than 18	All drivers	Primary	
Virgin Islands	Yes				Yes
Virginia	No	Drivers younger than 18 and school bus drivers	All drivers	Primary: for texting by all drivers.	Yes
Washington	All drivers	Learner's permit and intermediate license holders.	All drivers	Primary	Yes
West Virginia	All Drivers	Drivers younger than 18 who hold either a learner's permit or an	All drivers	Primary	

		intermediate license			
Wisconsin	No	Learner's permit or intermediate license holder	All drivers	Primary	
Wyoming	No	No	All drivers	Primary	Yes
Total	All drivers: 15 states and District of Columbia, Guam, Virgin Islands and Puerto Rico.	School Bus drivers: 21 states and District of Columbia. Teen drivers: 38 states and District of Columbia.	All Drivers: 47 states and District of Columbia, Guam, Virgin Islands and Puerto Rico.	Primary for all drivers texting: 43 states, District of Columbia and Puerto Rico. Secondary for all drivers texting: 4.	40 states, U.S. Virgin Islands and District of Columbia.

.* Utah considers speaking on a cell phone, without a hands-free device, to be an offense only if a driver is also committing some other moving violation (other than speeding).

** Maine has a law that makes driving while distracted a traffic infraction. 29-A M.R.S.A. Sec. 2117.

Meeting Minutes (2/6, 2/20, 3/20, 3/26, 4/3, 4/10, and 4/17):

Attendees: Mary (Advisor), Joe (Client), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 2/6/2018

Scribe: Kristin

Agenda Topics:

1. Introductions between Client, Adviser and Capstone Team
2. Review Ideas for the Project Scope

Old Business

- Mary reviewed tips for the Capstone, including:
    - o Methods Section---since we are not doing experimental research we can describe how we approached our research in this section.
    - o Reflect on professional development throughout the process.
    - o Ask library about specific databases that could be helpful
    - o Figure out group schedule in advance to determine any dates team members might be away.

New Business

- Joe provided suggestions, including:
    - o Research can focus on any age
    - o His office will do a presentation in March with students. As a team, we could review presentation.
    - o It's helpful to personalize presentation. Joe said 75-80% of students in his presentations have known someone who has died as a result of texting while driving.
    - o **Vendors to Consider:**

- o   What companies are showing responsibility to make it better; wouldn't put 8 second delay on apple or google because lost revenue.
- o   AT&T has it can wait
- o   Video: Fletcher's the last text (AT&T)
- o   **Joe's answer:** None of the information is confidential

Action Items (with assigned owners and due dates)

Project Charter Responsibilities (due on 2/19)

1. **Project Overview-Spencer**

2. **Project End State and Scope- Highness**

2.1Change Management

3. **Assumptions Phil**
4. **Constraints Phil**
5. **Risks Kristin**
6. **Communication Strategy Adam**
7. **Project Structure Mohamed**

8. Steering committee—N/A

8. Stakeholder Commitments Jillian

Roles for Research (ongoing):
Mohamed & Spencer---Different Countries
Chris & Adam---State
- ●   Drivers Ed Curriculum
Jillian and Philip---Companies
Highness & Kristin---Companies

Kristin will complete status reports---due 2/28, 3/28 & 4/28

Next Meeting (Day & Time):

Tuesday (2/20) at 5pm

Attendees: Mary (Advisor), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 2/20/2018

Scribe: Kristin Humphrey

Agenda Topics:

1. Review Project Charter
2. Report out highlights on research so far--each two person team share:
   - Mohamed & Spencer---Different Countries
   - Chris & Adam---States
   - Jillian and Philip---Companies / Federal
   - Highness & Kristin---Companies
3. Questions for Mary/Joe
   - Can we change the title to our capstone to "Life can change in a blink of an eye"
4. Next Steps

Old Business

- Breaking into subgroups for research

New Business

1. **Feedback from Mary on Project Charter/ Scope:**
   - We can change name of Capstone to "Life Can Change in the Blink of an Eye"
   - We should narrow our scope, e.g. Anti-Texting campaign (in scope texting while driving) other driving hazards are out of scope.
   - We should focus on awareness & education
   - We need to narrow demographics (in scope---nationwide, state), highly developed nations (IN SCOPE), less developed nations (OUT OF SCOPE).
     - In Scope: Worcester stats, state of MA issues

- Look at advocacy groups & preventative methods (community police, high school, DA office), focus on select few/not too broad.
- Industry as a whole (cars), carriers or manufacturers (who has the greatest impact).
- Break down of Corporations:
    - **Service provider (Jillian & Phillip)**
    - **Mobile phone industry/manufacturers Apple, samsung, andriod etc. (Highness & Kristin)**
    - **High level for each (not in detail)**
- Probably won't find a lot in academic research, more in news media and industry publication.
- We can include the corp research that we have already conducted in the high level introduction/the prevention category
- Do org chart graphic for project charter (Mary/Joe then project manager); no steering committee

Action Items (with assigned owners and due dates)

- Edit Project Scope (update org chart, narrow scope, delete steering committee)---Spencer 2/22/18
- All-research in subgroups:
    - Mohamed & Spencer---Different Countries (3/13/18)
    - Chris & Adam---States (3/13/18)
    - Jillian and Philip--- Federal/ Phone Service Providers (3/13/18)
    - Highness & Kristin---Manufacturers (3/13/18)

Next Meeting (Day & Time):

Tuesday (3/13) at 5pm

Next Meeting Agenda Items

- Research groups report out on progress
- Discuss any details for 3/26 presentation
- Any updates from/questions for Mary/Joe

Attendees: Mary (Advisor), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 3.20.18

Scribe: Kristin

Agenda Topics:

1. Mary update on marketing opportunity for group.
2. Discuss any preparation for 3/26 event
3. Groups report out on research highlights
    a. Mohamed & Spencer---Different Countries
    b. Chris & Adam---States
    c. Jillian and Philip--- Federal/ Phone Service Providers
    d. Highness & Kristin---Manufacturers
    e. Review skeleton doc to start converting research to narrative
4. Questions for Mary/Joe
5. Determine next steps/action items for the next meeting.

Old Business

Salient Issues/Best Practices report out from each group:
   a. Mohamed & Spencer---Different Countries
   ● Best practices--a couple of countries stand out (UK, Germany, Sweden)---tough law enforcement.
   ● Focus on education.
   ● Sweden has 5 million vehicles, with traffic fatality rate of around 200/year
      ○ Laws on TWD not as severe as others but they focus almost entirely on awareness, alternative behaviors

- - Recommendations for hands free devices, voice assist features, give alternatives, statistics/awareness
  - Hands on the wheel not on the mobile (rhymes), billboards/commercials
  - Put law in place in 2013, cut down traffic deaths from 500 to 260-670
- Feature if going over a certain speed, locks all functions except emergencies.
- Most popular European model, point penalty system.
- UK--if caught texting while driving--200 pound fine, but also 6 points that stay 4-11 years (halfway to having your license revoked) (3 points for excessive speeding).
- Germany does similar to UK but not as steep penalty.
- Texting and driving even greater punishment than speeding
- Germany pushed ban all blanket use of cell phone (zero tolerance)
- UK up to 60-70% text while drive (but only 15% admit to doing it), Sweden more people admit to doing it.
- Focus on education, website easy to navigate key points
- Denmark & Canada good too

b. **Chris & Adam---States**
- Hand held bans instead of "texting" band. Some states don't ban texting and driving at all
- Most of the texting & driving laws, if younger than 18 can't use hand held laws.
- Bus drivers can't use handheld
- Great data/spreadsheets we can incorporate
- 2018 plan, budgeted money, law/education $50,000 for texting with driving--for entire commonwealth (Massachusetts)
- Audio/visual stats on texting while driving
- Safe texting zones in New York state (map), visual we can include
  - Thinking about convenience factor, if enough places exist people might be more likely to do it.
  - Text stops
- Massachusetts comparatively better than other states
- Worcester and town don't have any prevention programs

c. **Jillian and Philip--- Federal/ Phone Service Providers**

- Automotive companies and phone companies
- Federal not any law, but there are policies for employees (can't text while drive)
- National NSTA had surveys/statistics that they sent out---highest among 16-24 year olds, 3,477 people killed/day
- Instructions for employees to lead by example
- DOT has a lot, 1 text or call can ruin it all
- A lot of agencies have campaigns (triple A has some, drop it and drive, national safety council)
- Cell phone---best practices write up & make into graph
- Cell phones have functions where parents can lock functions of phones for teens.

d. **Highness & Kristin---Manufacturers**
- Analysts say Apple and other smartphone manufacturers could add technology that forcibly shuts off text messaging and other distracting features for drivers but No major smartphone manufacturer has done it.
  - o The companies may fear putting off customers if such safety features were forced upon them, analysts said.
  - o A Twitter poll on whether consumers would want the technology to stop TWD---30% said this should be implemented, 49% said no, 21% said unsure
- Apple has received a patent for developing technology that would lock iPhone functions such as texting when the phone's owner is driving. Apple would be able to sense the location of the phone within the car based on motion and analyzing the scenery through photo or video data
  - o Apple's patent for "lock-out mechanisms" was filed in 2008 and granted in 2014.
- In June of 2017, Apple came out with "do not disturb while driving mode" feature that also switches off other alerts that tempt people to look at their phones while driving.
  - o **Example of the text:** when the car is in motion, anyone else who texts will get an automated response that reads: "I'm driving with Do Not Disturb turned on. I'll see your message when I get where I'm going."
    - o A second text also gives them a way to break through and get your attention in the case of an emergency by telling them, "If this is urgent, reply 'urgent' to send a notification through with your original message."

- - Apple is fairly late as Android already offers Auto Reply through Android Auto on any modern Android phone.
  - AT&T encourages the use of a free app, Drivemode, that can stop incoming texts.
  - AT&T commissioned research by an addiction expert who said that using a phone sets off releases of a neurochemical called dopamine that makes it hard to resist the ping.
  - Student advocates have requested to Apple that the company make it easier for users to track how much they are using their phones.
    - Ex: like the Health App on every iPhone, except instead of counting steps, it could track how much time you spend on Snapchat or Facebook," said Evan Sabri Eyuboglu, another group leader.
  - Safedrive, an android ap, kicks you off your phone

New Business

- Notes from Mary & Team Meeting:
  - o Group will meet at 5:30 PM before presentation next Monday (3/26)
  - o Take Photo from event
  - o There is a gala event on 19th to find out Capstone winner, location: Bull Mansion
  - o Our presentation will be the last group on Monday (4/23)
  - o Marketing Opportunity--video shoot in Joe's office, video will stay on website for up for 3 years. Some time the week of 4/23.
  - o FYI: Summer course $750 if you are trying it for first time (professional life waiver)
- **Other Notes from Team Discussion:**
  - Spencer--looking at insurance companies
  - Drivers Ed program---look at what is currently being done, if nothing is done, we could add that as recommendation. Chris & Adam could look at requirements for Drivers Ed. Potentially look at states with lowest statistic--explore any correlations with drivers ed
  - Health Class---recommend texting while driving included as a public health concern
  - Try to use education of other countries as a model
    - Consider looking at Dubai
  - We could look into examples of other campaigns
  - Using similar technology that monitors speeding could be applied to cell phones
    - Look at whether phones have considered opting out of safety functions versus opting in

- ○ Research campaigns around cities
- ○ Come up with a hashtag that would trend, share your story, we could quantify our reach, make statement on boards

Action Items (with assigned owners and due dates)

- Start filling out trends & industry/findings in paragraph format (All-3/26)
  - o Select major talking point issues
- Joe suggestion---reach out to Worcester Police (Chris)
- Group should bring their computers to future meetings to work on writing (3/26)
- Next Monday (3/26) at 5pm after that & we'll meet every Tuesday from now until the end of the project

Next Meeting (Day & Time):

Monday (3/26) at 5:00 PM followed by the DA's presentation.

Next Meeting Agenda Items

- Review write up/assigned areas of research
- Prepare for Presentation
- Questions for Group/Joe/Mary

Attendees:Jillian, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 3.26.18 , DA's Presentation on Texting While Driving

Scribe: Kristin

Notes from Group Meeting Before Presentation:

- Next meeting 5pm, bring computers, start working on narrative
- Fill out narrative in outline, with focus on recommendations/salient issues that can be drawn for the presentation.

Highlights from Presentation:
- Police chief attended
- Viewed powerful AT&T video "It Can Wait"
- Tech made so it is hacking the brain (same tech as slot machines) (dopamine released)
- 60 min brain hacking video
- Knows how to write code that will get the brain to do certain things, dopamine---programs designed to provoke neurological responses (rewards), trigger brain to make you want more
- Algorithm, see improvement in behavior this burst vs that burst
- Part of a controlled set of experiments , the longer we look at screens, the more ads they have about us
- "Addiction code" people have figured out how addiction in brain works
- Have to be smarter than phones (they are doing best they can to make you check phone)
- Distracted driving awareness month
- Three types of distraction: manual, cognitive, visual (TWD affects all three)
    - Dots example---focus on 1 the other three disappear
- Joe--example of families who have lost kids to driving accidents
- Basic math, travel the length of football field blindfolded when you text for 4.6 seconds at 55 MPH
- Phone have apps to say "I'm Driving"

- AT&T taking most responsibility of phone companies
- Laws often made after behavior has been mobilized (trying to put something on paper after already issue)---limited amount of efficacy law will have (professor comment)
- The meeting was filmed and on the news

Attendees: Mary (Advisor), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 4.3.18

Scribe: Kristin

General Discussion:

- Consider creating an Infographics/stats on the issue
- Dry run presentation the week before 4/23 (on the week on 4/17)

Legislative Notes:
- Massachusetts comprehensive health curriculum framework (rep recommendation after we asked them about sponsoring health class bill)
  - Written in 1999
  - Fits category of personal and community health (fits theme of assessing risks)
  - Public safety excluded from committee that developed health framework

Upcoming Events:
- Getting filmed for website 4/23 week
- 5/19 reception 4:30-6:00 (gala)
- Parking hard on 5/20---look out for emails about graduation

Action Items (with assigned owners and due dates):

- Finish Draft of section for 4/10 (everyone)
- Dress Business/Suits for presentation on 4/23/18
- Chris will send draft to MA Comprehensive Health Curriculum team and copy Capstone

Next Meeting (Day & Time): 4/10/18
Next Meeting Agenda Items:

- Review Progress to date

Attendees: Mary (Advisor), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 4.10.18

Scribe: Kristin

Discussion:

- Mary emailed examples of past presentations
- Team reviewed Capstone examples to look at format (such as including bios in the introduction)
- There will be 7-8 Universities competing at Suffolk University
- Team discussed that public safety is not represented on health education committee (therefore, texting while driving is a component missing in health education).
- Team discussed order of the paper:
    - Federal, state, commonwealth, cell phone companies, international last
    - Trends in industry (broad)
    - Salient issues---key problems

Action Items for Everyone to completed by 4/17:

- Finish Powerpoint (4/17)
- Write a paragraph of the most important issues
- Focus presentation on salient issues

Attendees: Mary (Advisor), Capstone Team: Jillian, Phillip, Adam, Mohamed, Spencer, Chris, Highness, Kristin

Date: 4.17.18

Scribe: Kristin

Summary of Meeting:

- Team reviewed PowerPoint with Mary

Recommendations for Presentation:
- Slides should be around 20 total
- Make sure not to block the screen
- Open presentation with video slide
- Organize presenting so someone takes care of next slide when someone is talking
- Chris—intro slide (introduce client)---use slide that has picture on it.
- In general---more graphics, less text, only a few words/slide
- Highness will cover recommendations slide
- Add in what we learned "reflections slide"
  - Societal issue of texting while driving, exposure to DA's office, how to implement a PSA and date we did it, channel 3 covered us—PSA back in March.

- Make sure to mention PSA !

Logistics:
- Total time: 45 Min, leave 15 min for questions.
- Adviser grades paper, 4 judges evaluate presentation.
- Organize slides in order of people who are presenting
- Video team will be filming presentation.

Upcoming Deadlines:
- Hand in everything by 4/23 (ideally) but 4/27 is the latest
- Reflective Paper is also due on 4/23 But by Friday 4/27 at the latest

Monthly Report for 2/21, 3/31, 4/19

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Life Can Change in the Blink of an Eye
Monthly Report Number One
February 21, 2018

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Objectives of Project

On February 6th, 2018; the Texting While Driving Capstone Team, which includes: Christopher Rutigliano, Adam Menard, Spencer Pinkney, Mohamed Ndjikam, Phillip Gates, Jillian Elalaoui, Highness Meena, and Kristin Humphrey; had an initial meeting with their advisor Mary Piecewicz and Client, District Attorney, Joe Early. Within this meeting we had an opportunity to learn more about what the client had done in the area of texting while driving and where we could help fill the gaps. We began to narrow our project scope and determined that the objectives of the project will include the following: to gather significant data on best practices for addressing the issue of texting while driving including state, national, international and corporate research; participate in a presentation for the DA's office that will take place on the Clark campus and create a PSA. Our research will culminate in a final report that is between 75-125 pages in length.

Develop a Project Plan and outline the steps with dates and who is responsible for each item

During the first few weeks of the project, the Capstone team completed a RACI Matrix (below) to delineate who was responsible for each item of the project. Additionally, the team completed a Gantt Chart schedule to further breakdown an organized visual of key deliverables and due dates throughout the duration of the project. The team completed a project charter which will act as a roadmap throughout the project.

	Roles / Responsibilities							
	Spencer	Jillian	Philip	Kristin	Highness	Adam	Mohamed	Chris
Brief Report to Client	A	A	A	A	A	A	A	R

Gantt Chart	R	I	I	I	I	I	I	I
Project Charter	R	A	A	A	A	A	A	A
Ground Rules	I	I	R	I	I	I	I	I
Stakeholder Analysis	I	I	I	I	I	R	I	I
Risk Assessment	I	R	I	I	I	I	I	I
Monthly Status Reports	I	I	I	R	I	I	I	I
Research	A	A	A	A	A	A	R	A
Best Practice Overview	A	A	A	A	R	A	A	A
Final Report	R	A	A	A	A	A	A	A
Final Presentation	R	A	A	A	A	A	A	A

In our initial meeting as a team on February 6th, we decided to subdivide the research to maximize efficiency in tackling this large topic area. Group A consists of Mohamed, Spencer, Adam, and Chris. Group B members are Kristin, Highness, Phillip and Jillian.

From there, we further subdivided the groups to the following: Mohamed & Spencer will research industrialized countries; Chris & Adam will research different states; Jillian and Philip will research federal laws, corporations; Highness & Kristin will research corporations. We initially were going to have one of the groups do local research but felt there would be more substantial information in the area of corporations research (technology to help the issue, actions taken by phone providers, examples of policies that companies have created for prevention etc.). The focus areas for these groups slightly shifted after our second advisor meeting (see below).

What do you need at this time from your client?

Now that our project charter has been finalized by our advisor, as a next step we have sent it over to our client for approval and for any feedback. We have coordinated with our client and determined the final presentation will be on April 23rd, 2018 from 3:30-4:30 PM. We have been informed that the DA's office is working to coordinate the community presentation at Clark University for March 26th at 6:30 PM and that it will be confirmed on February 27th, 2018. We also always welcome any thoughts, feedback questions from our client at any time.

What steps have you taken in completing the Trends in Literature?

Each of the aforementioned subgroups has started to conduct research in their respective area. We will continue to each dive deeper in our research areas and report back in our next group meeting, which will take place on March 13th at 5pm.

Challenges your group is facing now please list these

There have not been any major challenges and our group is pleased with the collective strong work ethic and cohesiveness the team members have all demonstrated.

One initial programmatic challenge that we have tackled is to further refine our project scope. Our initial project charter included too many elements given the very short timeframe of this project. During our second advisor meeting on February 20th, Mary helped our group to refocus the scope. Some adjustments include that we specified a focus on developed countries and will focus our corporate research on cell phone providers and manufacturers (versus companies in general). We previously had done research on companies, broadly speaking, however this scope is too large. The research we have conducted in that area can inform the introduction and high level portion of our paper but we will spend more time on the manufacturers and providers. Further, we will not get into granular detail on specific companies but rather look at overall trends in the industry.

We also discussed that suggestions beyond the scope of the this project could be included in the future recommendations suggestion. For example, in our research we have discovered some national leaders in texting while driving advocacy efforts that travel to do presentations. We will include these in the recommendations as well as other discoveries that are out of scope but may be relevant for future directions the DA's office takes with this project.

Life Can Change in the Blink of an Eye
Monthly Report Number Two
March 31, 2018

Objectives of Project

The objectives of the project will include the following: to gather significant data on best practices for addressing the issue of texting while driving including state, national, international and corporate research; participate in a presentation for the DA's office that will take place on the Clark campus and create a PSA. Our research will culminate in a final report that is up to 125 pages in length.

Develop a Project Plan and outline the steps with dates and who is responsible for each item

The Capstone team is still using the RACI Matrix (below) as a visual guideline to delineate who is responsible for each item throughout the project. The letters in the matrix stand for: (R) responsible; (A) accountable; (C) consulted; and (I) informed. Additionally, the team completed a Gantt Chart schedule to further breakdown an organized visual of key deliverables and due dates throughout the duration of the project. The team completed a project charter which will act as a roadmap throughout the project.

	Roles / Responsibilities							
	Spencer	Jillian	Philip	Kristin	Highness	Adam	Mohamed	Chris
Brief Report to Client	A	A	A	A	A	A	A	R
Gantt Chart	R	I	I	I	I	I	I	I
Project Charter	R	A	A	A	A	A	A	A
Ground Rules	I	I	R	I	I	I	I	I
Stakeholder Analysis	I	I	I	I	I	R	I	I
Risk Assessment	I	R	I	I	I	I	I	I
Monthly Status Reports	I	I	I	R	I	I	I	I
Research	A	A	A	A	A	A	R	A

Best Practice Overview	A	A	A	A	R	A	A	A
Final Report	R	A	A	A	A	A	A	A
Final Presentation	R	A	A	A	A	A	A	A

What do you need at this time from your client?

We do not need anything from our client at this time. We would like to thank our client for giving a powerful presentation on March 26th about the dangers of texting while driving.

Reflection on 3/26/18 Presentation

On Monday, March 26th the Capstone team attended DA Early's Presentation on the dangers of texting while driving at Clark University. Per our client's suggestion, Chris reached out to invite the Worcester Police Chief to attend the presentation and we were pleased that he did come to the event. The team left the presentation even more energized to make an impact on the critical issue of texting while driving. One takeaway from the presentation that the group reflected on is the importance of sharing stories and getting people emotionally invested in the issue. DA Early's presentation underscored how addicting texting is and introduced the concept of technology made to hack the brain and the "addiction code", ways in which programmers are able to write code that will get the brain to do certain things. Studies have shown the ping of getting a text releases dopamine (reward center) triggering the brain to want more. We found this background to be important/compelling and we plan to incorporate it in to our final project. This research adds to the argument that it becomes even more important to have measures to prevent texting while driving since many people are fighting neurological impulses to not do the behavior. As one of the audience members/Professors said, laws are often made after behavior has been mobilized (trying to put something on paper after it is already an issue)---which limits the amount of efficacy a law will have. This further highlights how important education, awareness, and prevention programs are for addressing the issue of texting while driving.

The DA's presentation and our Capstone Project also made it on Worcester News Tonight! https://www.chartertv3.com .

What steps have you taken in completing the Trends in Literature?

On Tuesday, March 22nd, the Capstone team met and reported out on the follow subgroups' research highlights: Mohamed & Spencer (Other Countries), Chris & Adam (States), Jillian and Philip (Federal/ Phone Service Providers), and Highness & Kristin (Manufacturers). This report was a helpful step in getting everyone up to speed with each others' findings and allowed us to start thinking about the salient issues we have learned so far in each area of the project.

We have accumulated a large amount of research and our next area of focus will be converting our notes in to a narrative form. To that end, we have created outlines for the skeleton of the paper to help make it easier and more efficient when we convert our notes to narrative form. We are planning to have a chunk of this accomplished before our next meeting and to meet every week until the presentation to continue to refine our narrative.

In addition to the aforementioned research topic areas, after our meeting on 3/22 we decided to also look at insurance companies, drivers Ed programs and recommending that health classes consider adding texting while driving in to their curriculum, given that it is a major public health issue. To that end, Chris reached out to Senator Moore and Representative Kane requesting that they co-sponsor a bill to promote the education of texting while driving and distracted driving in High School Health Class.

Challenges your group is facing now please list these

We are not facing any major challenges at this time other than the anticipated challenge of converting an extensive amount of research in to narrative form which is our current focus area. We are continuing to work through the challenge of breaking larger ideas in to smaller projects that fit within the scope and the challenge of a short time frame. Our group continues to be diligent, cohesive, and is not experiencing any challenges related to the team.

Life Can Change in the Blink of an Eye
Monthly Report Number Three
April 19th, 2018

Objectives of Project

The objectives of the project will include the following: to gather significant data on best practices for addressing the issue of texting while driving including state, national, international and corporate research; participate in a presentation for the DA's office that will take place on the Clark campus and create a PSA. Our research will culminate in a final report.

Develop a Project Plan and outline the steps with dates and responsibilities In

the final month, the Capstone team is still using the RACI Matrix (below) as a visual guideline to delineate who is responsible for each item throughout the project. The letters in the matrix stand for: (R) responsible; (A) accountable; (C) consulted; and (I) informed. Additionally, the team has a Gantt Chart schedule to further breakdown an organized visual of key deliverables and due dates throughout the duration of the project. The team has a project charter which has been a roadmap throughout the project.

	Roles / Responsibilities							
	Spencer	Jillian	Philip	Kristin	Highness	Adam	Mohamed	Chris
Brief Report to Client	A	A	A	A	A	A	A	R
Gantt Chart	R	I	I	I	I	I	I	I
Project Charter	R	A	A	A	A	A	A	A
Ground Rules	I	I	R	I	I	I	I	I
Stakeholder Analysis	I	I	I	I	I	R	I	I
Risk Assessment	I	R	I	I	I	I	I	I
Monthly Status Reports	I	I	I	R	I	I	I	I
Research	A	A	A	A	A	A	R	A
Best Practice Overview	A	A	A	A	R	A	A	A
Final Report	R	A	A	A	A	A	A	A
Final Presentation	R	A	A	A	A	A	A	A

What do you need at this time from your client?

We do not need anything from our client at this time. We would like to invite our client to join us in celebrating the culmination of our project over dinner at Sawa Hibachi Steakhouse in Shrewsbury on April 23rd at 5:30 PM. We also want to again thank our client for his support and the opportunity to work with him on this important project.

What steps have you taken in completing the Trends in Literature?

The majority of the month has focused on converting our notes to the final narrative and presentation. The Capstone team met on Tuesday April 3rd, Tuesday April 10th and Tuesday April 17th. On April 3rd and 10th we reviewed and discussed progress on the narrative as well as an outline for the PowerPoint. The organized outline for the paper has been helpful for a smooth process of writing everything up and we are pleased that we have maintained a good pace for getting the writing completed. We have converted the most important points in to the PowerPoint presentation.

Each team has entered their respective sections in to the final doc and summary of salient issues. In the final week, we will be working on edits and formatting, however, we have made an effort to do our notes in the correct font, size and APA format to make the final editing step a smoother process.

In our meeting on April 17th we reviewed the first draft of our presentation with our advisor. Our presentation was 51 slides long and our advisor suggested that we reduce it down to around 20 slides for the final presentation. We will keep the full 51 slide version to send as an attachment but have made our presentation for April 23rd much shorter and more concise. Some general feedback was to reduce text and add more visuals. In our meeting we spent time editing slides and reviewing the flow of our presentation. We will be meeting again on Friday, April 20th to do a practice run with our updated slides.

Other Project Updates:

Marketing
Chris put together some options for a social media campaign and the team voted on some of our favorites to be highlighted in our presentation. On April 16th, we officially launched the social media campaign and tagged the DA's office. Our hashtag is #DontDoItLifeCanChangeInTheBlinkOfAnEye. We are hoping this will be a way for us to collect stories and raise awareness on the issue of texting while driving.

Legislative

On April 12th, Chris contacted the Commissioners Office for the Department of Education to advocate for a texting while driving component to be included in the health education curriculum. He spoke with the Commissioner's assistant who advised him to send the email to her and she would get it off to the Commissioner. Below is a copy of the email that was sent:

Commissioner Riley,

I represent a group of eight students from Clark University currently working on a Capstone project titled, Texting and Driving: Life can change in the blink of an eye. We are trying to bring awareness to the dangers of distracted driving/texting while driving specifically within the Commonwealth of Massachusetts. From 2015-2016 according to the National Highway Traffic and Safety Administration there has been a 5.6% increase in traffic deaths. According to the Insurance Institute for Highway Safety and Highway Loss Data Institute, "the fatal crash rate per mile driven for 16-19 year-olds is nearly 3 times the rate for drivers ages 20 and over. Risk is highest at ages 16-17. In fact, the fatal crash rate per mile driven is nearly twice as high for 16-17 year-olds as it is for 18-19 year-olds."

We approached both our State Senator and State Representative for assistance in creating a bill to educate young drivers and Representative referred us to the Massachusetts Comprehensive Health Curriculum Framework. After further review we discovered that Health Curriculum Framework is not a mandatory framework but a guideline for schools to follow and incorporate into their own curriculum. The curriculum makes no mention of the dangers of distracted driving. Currently new drivers' only exposure to the dangers of distracted driving come from the news, PSA's and Drivers Ed. Most public schools in the commonwealth do not teach drivers education and as a result the students have to go to private drivers education schools which are very expensive. Some new drivers do not take private drivers education due to the high cost. We feel it would be in the best interest of the public to incorporate/ make mandatory in an updated Massachusetts Health curriculum Framework at the public high schools through their health classes that focus on distracted/texting while driving education and awareness. "The current 1999 Health Framework was developed by a committee of Massachusetts teachers of health, physical education, family and consumer sciences, health educators from higher education, physicians, and school nurses." There was no representation from Public Safety. The Curriculum is outdated and needs to have Public Safety input. Are there any immediate plans to have the Massachusetts Comprehensive Health Curriculum Framework? If yes, can you elaborate, if no, is there a reason why? Our study is showing that education is one of the best preventative measures to help save teen lives.

Chris P. Rutigliano, et al
Graduate Student

Clark University

Closure Celebration
On April 10th we made reservations to Sawa Hibachi for April 23rd to celebrate the culmination of our Capstone Project. We would like to invite our Advisor Mary to join us as well.

Challenges your group is facing now please list these
We are not facing any major challenges at this time and feel our project is in good shape. We are looking forward to presenting on April 23rd and continuing to reflect on our overall experience.

7 Bibliography

Administration, N. H. T. S. (2018). Distracted Driving.   Retrieved from:
https://www.nhtsa.gov/risky-driving/distracted-driving

Are You Compulsive About Texting & Driving? Survey Says...You Could Be. (November 5, 2014) Retrieved from:
http://about.att.com/story/compulsion_research_drivemode_ios_availability.html

Asbridge, M., Brubacher, J., Chan, H., (2012). Cell phone use and traffic crash responsibility: A Culpability Analysis of Collision-Involved Drivers. Injury Prevention, Retrieved from:
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.845.8133&rep=rep1&type=pdf

AT&T DRIVEMODE. (2018) Retrieved from: http://about.att.com/sites/it_can_wait_drivemode

Bain, P., (June 17, 2017). Texting while driving is up and so are car insurance rates. Retrieved from http://newsroom.longandfoster.com/2017/06/texting-driving-car-insurance-rates/

Beren, David. (January 19, 2011). T-Mobile introduces Drive Smart Android App, block texting while driving. Retrieved from:
https://www.tmonews.com/2011/01/t-mobile-introduces-drive-smart-android-app-block-texting-while-driving/

Boudette, N., (November 15, 2016). Biggest Spike in Traffic Deaths in 50 Years? Blame Apps. Retrieved from:
https://www.nytimes.com/2016/11/16/business/tech-distractions-blamed-for-rise-in-traffic-fatalities.html?_r=0

Brown, C., (2016). This technology could prevent people from texting and driving. Clark Howard. Retrieved 11 April 2018, from:
https://clark.com/cars/new-technology-addresses-distracted-driving/

Campbell, P., & Bradshaw, T., (July 21, 2017). Technology that aims to prevent the car text crash. Retrieved from
https://www.ft.com/content/80bde170-5e00-11e7-b553-e2df1b0c3220

Canadian Distracted Driving Updates. (March 17, 2018). Retrieved from
http://handsfreeinfo.com/canadian-cell-phone-law-updates/

Cellcontrol Team. (2018) 6 Organizations Committed to Stop Texting and Driving.Retrieved from:
    https://www.cellcontrol.com/blog/6-organizations-committed-to-stop-texting-and-driving

Cellular Phone Use and Texting While driving Laws. (June 23, 2017). Retrieved from:
    http://www.ncsl.org/research/transportation/cellular-phone-use-and-texting-while-driving-laws.aspx

Chase, J.D, (March, 2014) U.S. State and Federal Laws targeting distracted Driving. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4001667/

Chaudhary, N. K., Casanova-Powell, T. D., Cosgrove, L., Reagan, I., & Williams, A. (March, 2014). Evaluation of NHTSA distracted driving demonstration projects in Connecticut and New York. (Report No. DOT HS 811 635). Washington, DC: National Highway Traffic Safety Administration.

Chen, A., (July 7, 2016). U.S. has highest car crash death rate, despite progress, CDC says. Retrieved from
    https://www.cnn.com/2016/07/07/health/us-highest-crash-death-rate/index.html

Clarke, W., (July 26, 2016). How to use new technology to keep your teen driver safe – NY Daily News. Retrieved from:
    http://www.nydailynews.com/autos/street-smarts/new-technology-teen-driver-safe-article-1.2725257

Cohen, G., (October 13, 2008). Aegis Mobility Unveil New Technology. Retrieved from
    https://www.businesswire.com/news/home/20081013005620/en/Nationwide-Insurance-Aegis-Mobility-Unveil-New-Technology

Congress. Gov, (July, 31, 2017). Retrieved from:https://www.congress.gov/bill/115th-congress/house-resolution/493/text

Congress.gov (March, 3, 2011). Retrieved from:
    https://www.congress.gov/bill/112th-congress/senate-bill/528

Congress.gov. (May, 1, 2015). Retrieved from
    https://www.congress.gov/bill/114th-congress/house-bill/2154/text

DMV.org. (2018). Apps to fight distracted driving. Retrieved from:
    https://www.dmv.org/distracted-driving-apps.php

Doe.mass.edu (October 1, 1999) Retrieved from
http://www.doe.mass.edu/frameworks/health/1999/

Dominick, Katie R., (May 8, 2015). Can the government stop people from texting and driving?
Retrieved from:
https://www.cbsnews.com/news/can-the-federal-government-help-stop-texting-and-driving/

Edgerton, J. (August 26, 2014). New technology lets parents set controls for teen drivers – CBS
News. Retrieved from:
https://www.cbsnews.com/news/new-technology-lets-parents-set-controls-for-teen-drivers/

Edgerton, J., (August 26, 2014). New technology lets parents set controls for teen drivers – CBS
News. Retrieved from:
https://www.cbsnews.com/news/new-technology-lets-parents-set-controls-for-teen-drivers/

Faulkner, L., (August 17, 2016). Texting and Driving: One of the Worst Decisions You Can
Make. Retrieved from: https://www.mkhlawyers.com/blog/lauren-faulkner/

Federal Communications Commission. (April, 5, 2018). The Dangers of Distracted Driving.
Retrieved from: https://www.fcc.gov/consumers/guides/dangers-texting-while-driving

Federal Motor Carrier Safety Administration. (2017). (Mobile Restrictions Fact Sheet. Retrieved
from:
https://www.fmcsa.dot.gov/driver-safety/distracted-driving/mobile-phone-restrictions-fact-sheet

Golson, J., (January 4, 2016). Volvo wants you to Netflix and drive - The Verge. Retrieved from:
https://www.theverge.com/2016/1/4/10708854/volvo-ericsson-concept-26-autonomous-video-streaming-ces-2016

Gotfryd, A., & Vannette, J. (2016). Texting While Driving in a New Age of Automobile
Advancements: Legal Implications to Be Determined – Timely Tech. Illinoisjltp.com.
Retrieved 11 April 2018, from
http://illinoisjltp.com/timelytech/texting-while-driving-in-a-new-age-of-automobile-advancements-legal-implications-to-be-determined/

Hall, Cheryl. (September, 2013). AT&T spending millions to get it can wait message across. Retrieved from: https://www.dallasnews.com/business/business/2013/09/21/att-spending-millions-to-get-it-can-wait-message-across

Hermsen S., (January 29, 2015). Driving in Germany – What are you Allowed to do with Your Mobile Phone Behind the Wheel? Retrieved from https://legalknowledgeportal.com/2015/01/29/driving-in-germany-what-are-you-allowed-to-do-with-your-mobile-phone-behind-the-wheel/

Herns, P., Sloan and Wilson., Congress Considers National Distracted Driving Bill. Retrieved from: https://www.hg.org/article.asp?id=18781

Information for yrkesforare. (2018). Retrieved from https://www.transportstyrelsen.se/sv/sluta-rattsurfa/information-for-yrkesforare/

Ion, F. (April 30, 2015). 11 Things You Need to Know About Android Auto. Retrieved from: https://www.greenbot.com/article/2914832/11-things-you-need-to-know-about-android-auto.html

IRTAD Annual Report. (2010). Retrieved from https://www.itf-oecd.org/sites/default/files/docs/10irtadreport.pdf

Jacobs, S., (November 4, 2009). Illume to Introduce Software to Prevent Distracted Driving. Retrieved from: http://www.automotive-fleet.com/channel/safety-accident-management/news/story/2009/11/illume-to-introduce-software-to-prevent-distracted-driving.aspx

Japan to Ban Cell Phone Use While Driving. (December 27, 2003). Retrieved from http://wirelesswatch.jp/2003/12/27/japan-to-ban-cell-phone-use-while-driving/

Jolly, Jennifer. (May 29, 2016). The best tech to prevent distracted driving. Retrieved from: https://www.usatoday.com/story/tech/columnist/2016/05/29/best-tech-prevent-distracted-driving/85121278/

Kia Technology - UVO Infotainment - Advanced Car Technology. (n.d.). Retrieved from http://www.kia.com/us/en/content/technology/uvo/introducing-uvo

Klayman, B., (2014). GM to offer connected car, automated driving technology in 2016. U.S..
    Retrieved 11 April 2018, from
    https://www.reuters.com/article/us-gm-connectedcar/gm-to-offer-connected-car-automate
    d-driving-technology-in-2016-idUSKBN0H20TP20140907

Lee, W., (April 17, 2017). Some families blame phone makers for distracted driving deaths.
    Retrieved from:
    https://www.sfchronicle.com/business/article/Some-families-blame-Apple-for-distracted-
    driving-11076178.php

Legislators, N. C. o. S. (2017). Retrieved from
    http://www.ncsl.org/research/transportation/cellular-phone-use-and-texting-while-driving
    -laws.aspx

Lindblom, M., (June 9, 2017). A cure for distracted driving? Software locks your phone while ...
    Retrieved from:
    https://www.seattletimes.com/seattle-news/transportation/a-cure-for-distracted-driving-so
    ftware-locks-your-phone-while-behind-the-wheel/

Luckey, Ryan. (April 3, 2018). AT&T is launching an all-new Virtual Reality (VR) experience
    to show the real dangers of distracted driving as part of our It Can Wait campaign.
    Retrieved From: http://about.att.com/newsroom/your_attention_please.html

Lynch, C., (December 15, 2016). Should Phone Makers Take on the Texting-While-Driving
    Problem? Retrieved from:
    https://www.thezebra.com/insurance-news/3714/should-phone-makers-take-on-the-textin
    g-while-driving-problem/

Malegislature. Gov (June 29, 2017) Retrieved from
    https://malegislature.gov/Bills/190/S2092/BillHistory?pageNumber=1

Malegislature. Gov (June 29, 2017) Retrieved from https://malegislature.gov/Bills/190/S2103

Marquand, B., (October 6, 2015). How a ticket for texting while driving can affect car insurance
    rates. Retrieved from
    https://www.nerdwallet.com/blog/insurance/texting-driving-ticket-car-insurance-rates/

Mashable, S., (October 18, 2011). Ford vehicles will read you text messages while you drive
    CNN. Retrieved from:

https://www.cnn.com/2011/10/18/tech/innovation/ford-vehicles-read-texts-mashable/index.html

Matt Richtel, M. (Sept 24, 2016). Phone makers could cut off Drivers, so why Don't they? Retrieved from: https://www.nytimes.com/2016/09/25/technology/phone-makers-could-cut-off-drivers-so-why-don't-they.html?rref=collection%2Ftimestopic%2FLiability%20For%20Products&action=click&contentCollection=timestopics%C2%AEion=stream&module=stream_unit&version=latest&contentPlacement=2&pgtype=collection

McDonald, C. C., & Sommers, M. S. (2015). Teen Driver Perceptions of Inattention and cell phone use while driving. Traffic Injury Prevention, 16 Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4594631/

McFarland, M., (January 24, 2018). Do you text and drive? Your car insurance may go up. Retrieved from http://money.cnn.com/2018/01/24/technology/texting-and-driving-distracted/index.html

McKenzie, L., (March 6, 2018). Stop Me Before I Text Again. Retrieved from: https://www.insidehighered.com/news/2018/03/06/stanford-students-challenge-apple-iphone-addiction

Miller, E., (November 30, 2009). Distracted Driving Solutions Are Available, Tech Companies Say at FCC Workshop. Retrieved from: http://www.ttnews.com/articles/distracted-driving-solutions-are-available-tech-companies-say-fcc-workshop

Muller, J., (2010). Why Car Safety Features Can Be Dangerous. Forbes.com. Retrieved 11 April 2018, from https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/2010/05/25/ford-general-motors-technology-security-cars&refURL=https://www.google.com/&referrer=https://www.google.com/

Murdock, S. (June 9, 2015). Our Addiction To Cell Phones Is Costing Lives. Here's How We Can Stop It. Retrieved from: https://www.huffingtonpost.com/2015/06/09/cell-phone-addiction-driving_n_7543464.html

National Highway Traffic Safety Administration. (March, 2017). Distracted Driving 2015.
      Retrieved From:
      https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812_381_distracteddriving201
      5.pdf

National Safety Council. Retrieved from:
      https://www.nsc.org/road-safety/safety-topics/distracted-driving.

National Traffic Law Center. (May, 2017). Investigation and prosecution of distracted driving
      cases (Report No. DOT HS 812 407). Washington, DC: National Highway

Nield, D., (May 5, 2017). How to Set Up Auto-Response Texts When You're Driving. Retrieved
      from:
      https://fieldguide.gizmodo.com/how-to-set-up-auto-respond-texts-when-youre-driving-17
      94911685

Office of Worcester County District Attorney Joseph D. Early. Retrieved from:
      http://worcesterda.com/about/meet-your-da/

Penalty Points Endorsements. (2018). Retrieved from
      https://www.gov.uk/penalty-points-endorsements

Perez, S., (June 22, 2017). Do Not Disturb While Driving feature rolls out in Apple's newest iOS
      11 beta. Retrieved from:
      https://techcrunch.com/2017/06/22/do-not-disturb-while-driving-feature-rolls-out-in-appl
      es-newest-ios-11-beta/

Read, R., (2017). Nissan's solution to the distracted-driving problem? A 181-year-old armrest.
      The Car Connection. Retrieved 11 April 2018, from
      https://www.thecarconnection.com/news/1110324_nissans-solution-to-the-distracted-driv
      ing-problem-a-181-year-old-armrest

Richtel, M., (September 13, 2014). Trying to Hit the Brake on Texting While Driving
      https://mobile.nytimes.com/2014/09/14/business/trying-to-hit-the-brake-on-texting-while
      -driving.html

Richtel, M., (September 24, 2016). Phone Makers Could Cut Off Drivers. So Why Don't They?
Retrieved from:
https://www.nytimes.com/2016/09/25/technology/phone-makers-could-cut-off-drivers-so
-why-dont-they.html

Richtel, Matt., (September 19, 2012). AT&T Chief speaks out on texting at the wheel. Retrieved
from:
https://www.nytimes.com/2012/09/20/technology/att-chief-speaks-out-on-texting-while-d
riving.html

Shamoon, Evan., (January 24, 2016). Best apps to block texting while driving. Retrieved from:
https://www.verizonwireless.com/articles/best-apps-to-block-texting-while-driving/

Sprint, (May 04, 2016). Sprint unveils Car crash sculpture to Miami's texting drivers. Retrieved
from:
http://newsroom.sprint.com/sprint-unveils-car-crash-sculpture-to-miamis-texting-drivers.
htm

Sundeen, M., (March, 2007). Cell Phones and Highway Safety. Retrieved from
https://www.ncsl.org/print/transportation/2006cellphone.pdf

Team AA, (April 26, 2017). Samsung's new app will help drivers stay focused on the road.
Retrieved from:
https://www.androidheadlines.com/2017/04/samsungs-new-in-traffic-reply-app-is-design
ed-for-drivers.html

Texting behind the wheel: Soon illegal in Sweden too? (April 26, 2017). (Retrieved from
https://www.thelocal.se/20170426/texting-behind-the-wheel-soon-illegal-in-sweden-too

Thakran, S., (April 27, 2017). Samsung's in-traffic reply app aims to prevent accidents caused by
distracted driving. Retrieved from
https://gadgets.ndtv.com/apps/news/samsungs-in-traffic-reply-app-aims-to-prevent-accid
ents-caused-by-distracted-driving-1686651

Thaler, R., (September 26, 2009). Opting in vs. Opting Out. Retrieved from:
https://www.nytimes.com/2009/09/27/business/economy/27view.htm

The Associated Press, (May 14, 2013). Big 4 cell phone companies to team in ads against
texting-while-driving. Retrieved from:

https://www.cbsnews.com/news/big-4-cell-phone-carriers-to-team-in-ads-against-texting-while-driving/

The Daily Journal of the United States Government. (October 6, 2009). Retrieved from:
https://www.federalregister.gov/documents/2009/10/06/E9-24203/federal-leadership-on-reducing-text-messaging-while-driving

Traffic deaths fall below 4,000 in Japan for first time in 67 years. (January 4, 2017). Retrieved from
https://www.japantimes.co.jp/news/2017/01/04/national/traffic-deaths-fall-4000-japan-first-time-67-years/#.Wt1JMojwZPZ

Traffic Safety Measures in Japan. (2016). Retrieved from
newsroom.toyota.co.jp/en/filedownload/14221108

Wallace, K., (April 3, 2017). Driving while distracted: Which countries have toughest laws? Retrieved from
https://www.cnn.com/2017/03/24/health/distracted-driving-laws-global-countries/index.html

Wallace, K., (April 4, 2017). Distracted driving: Urging companies to crack down. Retrieved from:
https://www.cnn.com/2017/04/04/health/distracted-driving-company-cell-phone-bans-impact/index.html

Walter, D., (March 24, 2016). The best Android apps to prevent distracted driving. Retrieved From:
https://www.greenbot.com/article/3040482/android/the-best-android-apps-to-prevent-distracted-driving.html

Yin, Sarah. (September 13, 2011). Sprint app disables phone while driving. Retrieved from:
https://www.pcmag.com/article2/0,2817,2392912,00.asp