Written Testimony of

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Senate Commerce Subcommittee on Consumer Protection, Product Safety, and Insurance

"Protection and Privacy in the Mobile Marketplace"

May 19, 2011

Chairman Pryor, Ranking Member Wicker, and distinguished members of the Committee: My name is Morgan Reed, and I would like to thank you for holding this important hearing on privacy and the growing mobile devices marketplace.

I am the executive director of the Association for Competitive Technology (ACT). ACT is an international advocacy and education organization for people who write software programs--referred to as application developers--and providers of information technology (IT) services. We represent over 3,000 small and mid-size IT firms throughout the world and advocate for public policies that help our members leverage their intellectual assets to raise capital, create jobs, and innovate.

The new mobile apps world has sparked a renaissance in the software industry; small software companies are able to create innovative products and sell them directly to consumers. This is a radical departure from the era of up-front marketing costs, publisher delays, and piracy problems. The emergence of the mobile app market has eliminated the longstanding barriers to entry that our industry battled for the past two decades.

My goal today is to help explain how small business is building this exciting new industry, how what we are doing is helping consumers, and how the very real concerns about privacy must be dealt with holistically, rather than from a technology-specific perspective.

The Smartphone Ecosystem is Creating Jobs and Opportunities in a Tough Economy

The state of the world economy is profoundly unsettled. Questions about job security, healthcare, and foreclosure have become dinner table conversation throughout this country.

Vendor	1Q11 Shipments	1Q11 Market Share	1Q10 Shipments	1Q10 Market Share	1Q11/1Q10 Change
Nokia	24.2	24.3%	21.5	38.8%	12.6%
Apple	18.7	18.7%	8.7	15.7%	114.4%
Research In Motion	13.9	14.0%	10.6	19.1%	31.1%
Samsung	10.8	10.8%	2.4	4.3%	350.0%
HTC	8.9	8.9%	2.7	4.9%	229.6%
Others	23.2	23.2%	9.5	17.1%	143.7%
Total	**99.6**	**100.0%**	**55.4**	**100.0%**	**79.7%**

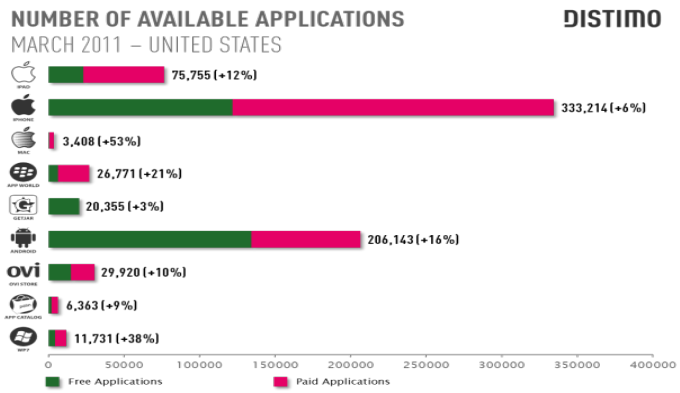
Source: IDC Worldwide Quarterly Mobile Phone Tracker, May 5, 2011

Note: Vendor shipments are branded shipments and exclude OEM sales for all vendors.

In the face of all of this turmoil, there has been a bright spot in economic growth: Sales of smartphones and tablets, such as the iPhone, the HTC Thunderbolt (running Google Android) the Samsung Focus (running Microsoft WP7), the iPad, Xoom and now RIM's Playbook continue to outpace all predictions and are providing a huge growth market in a slumping economy. In fact, nearly one hundred million smartphones were shipped in the first quarter of 2011[1] marking a 79% increase in an already fast growing market.[2]

[1] Mark Kurlyandchik, *IDC: Nokia Remains Top Smartphone Vendor Worldwide*, DailyTech, May 6, 2011.
[2] *Id.*

In 2008 Apple launched its App Store to provide a place for developers to sell independently developed applications for the iPhone. Since then, over 300,000 new applications have gone on sale, with billions of applications sold or downloaded. The Android platform has recently exceeded the growth rate seen in the iPhone, totaling more than 200,000 applications, with 10,000 new programs available each month. In 2010 we saw the release of Windows Phone 7, with its own applications store and an entirely unique user interface. Total unique apps across all platforms are expected to exceed 500,000 by the end of 2011.[3]



Possibly the most important thing we have noticed about the new apps world is how it has revolutionized the software development industry. It is nothing less than a rebirth. Startup costs of the modern app developer are a fraction of what they were just 10 years ago. With mobile and Xbox 360 apps, we have seen the return of the small, independent "garage" developer focused on products that can be created and shipped in a matter of months. This new apps-driven model creates a direct bridge between the customer and the developer. Our members tell us that being a developer has not been this exciting since the origins of the personal computer and software industry in the '70s and '80s.

The Mobile App Developer – An Analysis

Apps are overwhelmingly created by small businesses. Of 500 best-selling mobile apps, 88% are written by small businesses[4]; and in a majority of cases micro businesses with less than 10 employees.

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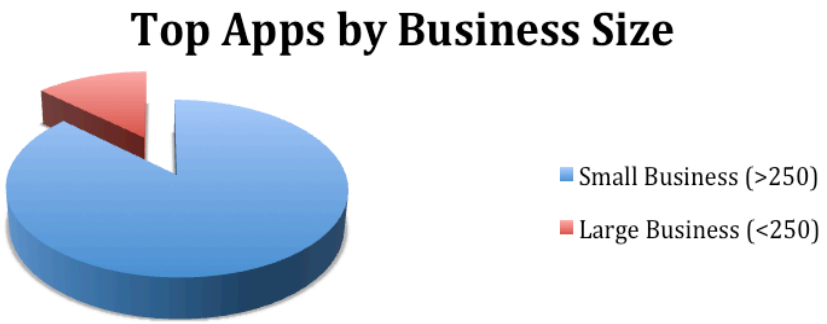
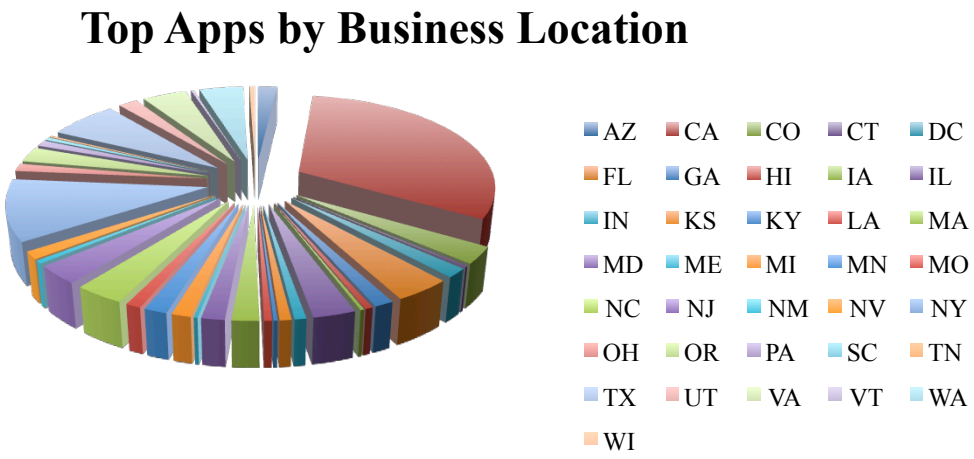
[3] *http://d2omthbq56rzfx.cloudfront.net/wp-content/uploads/2011/04/Distimo-survey-201103-app-stores-count.png*

[4] *ACT analysis of top 500 selling apps, some discrepancies exist due to lack of verifiable employment data and apps created by a developer who has significant investment from a larger company. Some apps branded for a larger company are in fact developed by small firms subcontracted to build the application. Sample size of 408 applications, from "top apps" on March 25 2011*



Second, app developers are not just in California. During the dot-com boom of the 1990s, the majority of growth occurred in Silicon Valley while the rest of the country was not able to reap the direct benefits of the economic boom. The growth of the mobile apps industry has led to job creation all across the United States. While California continues to have a large representation of app developers, nearly 70% of the businesses are located outside of the state of California. This new burgeoning industry allows developers to live almost anywhere, including Little Rock, Arkansas and Tupelo, Mississippi.



Third, app development companies have low initial costs but also have the ability to become a highly successful and sustainable business. ACT's members reported development costs ranging from $1,000 to upwards of $1,000,000. Given the wide range of our findings and those of other reports[5], it is useful to view the cost of mobile app development in tiers.

> Tier one represents a simple apps with no real back-end server-based functionality, and can run in the low thousands; this category makes up a significant percentage of all the

[5] *http://appmuse.com/appmusing/how-much-does-it-cost-to-develop-a-mobile-app/*

apps in various mobile stores. They may be single feature programs, vanity apps, or just irreverent apps like iBeer.

Tier two are the apps that provide multiple levels of functionality, often working with data stored in a remote server to provide information/ user generated content, or advanced capabilities like writing and saving specialized documents. This tier runs from $30,000 to $100,000.

Tier three runs from $100,000 on up. This category is for apps that may need to tie into sophisticated inventory management systems, require specialized licenses for content, interface with business critical databases not just to read, but also write information, and finally, games with immersive environments where art and music costs can be significant.

Understanding the Real Opportunity for Small Business

Mobile App Stores – In a store environment, app developers charge their customers to download applications and/or charge them for purchases they make inside the app. For example, photography app Hipstamatic costs $1.99 to download. If users want additional camera effects (Kodachrome or Holga for instance) they can buy the add-ons in the application.

The exponential growth in app stores during the past few years is unprecedented. Apple was first, launching the iTunes App Store less than four years ago, and was soon followed by Nokia, Google, Microsoft, Amazon and others. According to IHS, in 2010 the worldwide market revenue of these app stores in 2010 was $2.15 billion, a 160% increase over 2009, and is expected to reach nearly $4 billion this year. Forrester Research estimates that the revenue created from customers buying and downloading apps to smartphones and tablets will reach $38 billion by 2015.

A growing percentage of revenues for app markets are coming from "in-app purchases." According to Xyologic, a company that indexes and analyzes app store data, 40 percent of game downloads are now free titles with in-app purchases. In March, it found there were nearly 100 million downloads of free iPhone games from the App Store.

Yet revenues from app purchases and in-app purchases only represent a part of the overall opportunity for app developers. According to Xyologic, 80.8 % of all app downloads in the month of March were free. While some of those apps relied on in-app purchasing for revenue, many others were supported by advertising or developed to support other brands and services.

Custom Mobile Development - Additionally, many applications are made available for free by larger companies in order to extend services to mobile devices or as marketing tools. From Citibank's online banking app to Pepsi's "Refresh Project" and Conde Nast's magazine apps,

Fortune 1000 companies are increasingly offering mobile apps to their customers and potential customers. While large companies brand these apps, smaller companies with the expertise necessary to build world-class applications under tight deadlines usually build them. These apps represent the majority of the more than 600,000 free apps available across all app markets. This translates into a tremendous number of job-creating opportunities for smaller app development shops. Forrester Research predicts this market to reach $17 billion by 2015.

Mobile Advertising Revenues - Finally, some apps are supported either entirely or partly by advertising revenue. This is an increasingly important model especially as the Android platform grows in marketshare. Some applications charge for downloads and run advertisements inside the app itself. In-app mobile advertising is growing more slowly than revenues from app downloads and in-app purchases, but it is a particularly important revenue model for apps with enormous scale, or "eyeballs". In the games category, which represents around half the app market, the total revenue from in-app advertising was $87 million according to Juniper Research. Juniper expects that to grow to around $900 million by 2015.

The business model of the platform makes a difference in how developers pursue revenue. As shown in an earlier chart, the iOS store has more than 333,000 applications, and nearly 70% of those are paid for up front. Google/Android, a company whose entire revenue stream and dominant market position is dependent on advertising, tends to push developers towards the advertising model, with only 30% of the 206,000 apps relying on direct payment to the developer.

The Future for Mobile App Developers - Even more important are the opportunities that lay farther ahead. According to a recent Morgan Stanley report[6], most people haven't yet invested in such technology. True "smartphones" have around 25% penetration in the U.S.; in Asia, it may be as low as 6%. This represents a pathway for growth leading far into the future.

To understand just how important international sales are to the mobile apps market, one only needs to look at a comparison between the total number of users possessed by a combined AT&T / T-mobile (130 million wireless subscribers)[7] and China's number one wireless carrier, China mobile (584 million subscribers)[8]. Even if only 6% of China mobile's subscribers become smartphone users – and app purchasers – the market opportunity for U.S. software developers is huge.

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[6] *http://www.morganstanley.com/institutional/techresearch/pdfs/2SETUP_12142009_RI.pdf*

[7] *http://www.siouxcityjournal.com/business/local/article_f24b5818-ea11-5f04-b0b0-d7bbd02055b0.html*

[8] *http://www.wirelessweek.com/News/2011/01/Carriers-Subs-Reach-842M-China-Mobile/*

Taking Privacy Seriously: ACT Developing Mobile App Privacy Guidelines

This nearly $60 billion opportunity is predicated on an ongoing trust relationship between app developers and consumers, and that is why we take privacy so seriously. Accordingly, ACT has convened a working group of app developers representing the entire swath of the apps ecosystem. Additionally, our working group includes privacy experts and representatives from Privo, one of the four FTC-recognized COPPA Safe Harbors.

The goal of this working group is to provide developers with guidelines that help them to create a privacy policy that is clear, transparent, and enables them to fully utilize the various device platforms that are being created today. We expect our initial guidelines to be available within 30 days and will update them regularly. Additionally, we are working with other groups to build a privacy policy generator for app developers. Such a tool would allow developers to create custom privacy policies that fit the specific requirements of their application. This can remove hurdles for these micro firms, and help them to create simple, easy-to-understand privacy policies that comply with existing law and provide useful guidance to consumers.

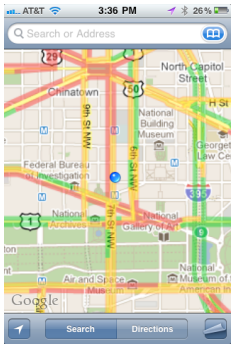
Finally, our working group is taking a proactive view of the FTC's Section 5 provisions under COPPA. Although we expect the FTC to come out with rules addressing mobile apps and COPPA very soon, we've chosen not to wait. Instead we are creating our guidelines and advising our members that mobile apps fall under COPPA, and apps developers should make sure that their apps comply with COPPA here in the U.S. and any similar privacy provisions in other countries or jurisdictions. When the FTC's rules are promulgated, we will adjust accordingly, but we always stress that members should err on the side of privacy protection.

Enabling Features While Protecting Privacy

Importance of Location Information for Efficiency- In the lead up to today's hearing, considerable critical attention has been directed at the type of information stored on smartphones. A misunderstood element in the public debate on this data collection is the valuable role location information plays in the underlying functionality of the device – beyond just mapping.

When a smartphone tracks the location of its user, it is making a note to remind itself which access point or cell tower was used there to connect to the Internet. When a user returns to that area, the phone remembers this information. Each day most phone users travel the same route to work or to attend school and then return home to the same place. Keeping this data enables the smartphone to easily find an Internet connection providing efficient, constant online access. This is important for two reasons.

First is battery life. A phone uses a lot of power to search for a cell tower or wireless router. If it constantly needs to search for an Internet connection, it will deplete its battery many times more quickly than if it maintained a constant connection. Customers rate the importance of battery life very highly as a feature in the customer experience, so keeping a charge is an important requirement of the phone. By maintaining a list of frequently visited locations, a smartphone avoids draining its battery in search of data connection points.

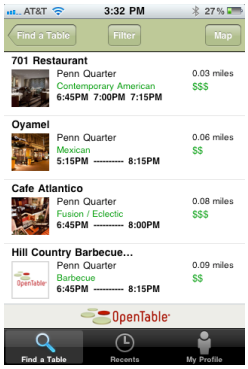


Map with Location and Traffic Data

The other reason efficient connectivity matters is spectrum scarcity. The proliferation of smartphones has led to a crowded wireless spectrum, leading to potentially diminishing service quality. Wherever possible, wireless carriers are eager to connect users to wi-fi for faster connection speed and to lessen the burden on wireless networks. Carriers even provide their own wi-fi service for free to customers in densely populated areas to help alleviate the demand for wireless spectrum. By keeping track of the wi-fi and cell tower locations at frequently visited areas, the smartphone can allow users to automatically switch to wi-fi networks to provide constant, high quality Internet connectivity while diminishing the pressures on a crowded spectrum.

Location Information for Consumers - While location data is essential for phones to operate efficiently, consumers also love the smartphone services made possible using location-based technology. Many of the most successful apps or smartphone features have become popular based on knowing exactly where users are at any given time. And that's exactly how customers want it.

Anyone who has owned a smartphone has probably charted their location as a blue dot on their map app. Many also use those same programs to see where the traffic bottlenecks are before starting their evening commute. Some apps use location to help users find the nearest gas station, post office, parking garage, or coffee shop.



Open Table Reservations

The OpenTable app adds location technology to its existing services to allow diners to find open tables at nearby restaurants, read reviews, and make reservations with a simple tap of the button. Using location information, the app can also provide step-by-step directions to the establishment.

Location services on smartphones have also changed the way we interact socially, creating a market for check-in features to tell your friends and family where you are. Facebook has an app with this feature and, within

the last decade, has achieved a market valuation approaching $100 billion. Foursquare, an app which exclusively provides check-in services, has been valued at nearly half a billion dollars.

There is clearly big business opportunity in this marketplace. But location-based services and advertising offer a unique opportunity for Main Street businesses as well. Some apps, like RedLaser, allow users to scan the UPC code of a product and, using the smartphone's location data, find several local retailers nearby where it can be purchased.

Red Laser Bar Code Scan

Meanwhile, a user searching for a particular product or service on their smartphone can receive an ad from a local store based on their current location data. These ads have the benefit of reaching potential customers at the exact time of a purchasing decision and cost far less than the newspaper circulars or the TV ads that big box stores are able to afford.

Similarly, local small businesses can also level the playing field with the national chain stores and Internet retailers through shopping apps like Groupon. This app has 38 million North American subscribers who receive daily discounts at local establishments based on their location data.

While improving the core performance of smartphones, location data is also the building block for apps that users find useful and provide small businesses with opportunities to reach new customers. This data also contains information about the user which they may want to keep private so appropriate safeguards must be in place to ensure it is used in a manner with which consumers are comfortable.

The Smartphone ID Conundrum

Recent news stories have focused on the existence of unique identifiers attached to each smartphone. Known as a UDID number for iPhone and Android ID for Android-based products, this is a number that serves as a unique token for each device. The *Wall Street Journal* article "What They Know - Mobile"[9] made special effort to note the transmission of this number by nearly every single application in the market. While highlighting the transmission of a "unique identifier" may make for good newsprint, the article unfortunately did not properly explain why developers transmit this number.

[9] *http://blogs.wsj.com/wtk-mobile/*

In order to help better explain the role this Smart Phone ID (SPID) number plays in the development and maintenance of mobile applications, ACT surveyed developers[10] to find out how they currently used the SPID number. Respondents highlighted three key uses:

- Allows developers to control access to parts of the program without locking the user out completely (i.e., locking achievement levels in games, viewing paid subscriber content);
- Prevents piracy of applications, allows verification of ownership for updates to apps; and
- Allows management of access control for software testing and customer service.

Additionally, developers reported on several benefits to their customers in specific and consumers in general. Most often cited were:

- Working in concert with other stored data, the SPID makes it possible to have applications remember your favorites even when you buy a new phone;
- Helps content providers know when your device is on a wi-fi network instead of 3G, thus allowing them to send you HD or other high bitrate content; and
- Makes it easier to receive updates without verification procedures that annoy customers.

Finally, developers use SPID numbers to interact with 3rd party ad networks; SPIDs are required by many ad networks as part of the terms of service.

At first glance, it would seem to make perfect sense to only allow the SPID to be shared with the app maker itself, but not with third parties. However, in today's world, many different companies work together to provide services to customers. For instance, when shipping a product via FedEx, the sender shares considerable personal information about the recipient with the (third party) shipper including contact information and purchased items. Similarly, small businesses rely on cloud computing to give customers a complete service offering in a cost-effective way. For game developers, a company like OpenFeint offers an easy way to keep track of scores and allows game users to interact with each other, saving app makers thousands of dollars in development time and ongoing infrastructure cost. This service needs to be able to tell devices apart.

Finally, developers felt that the usage restrictions and best practices for SPIDs were well documented, especially on Apple's iOS giving us plenty of advice to app makers on how to properly handle this information.[11]

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[10] *ACT April 28 questionnaire to members working on at least one mobile platform. Question: How do you currently use UDID/Android ID in your development process?*

[11] *http://developer.apple.com/library/ios/#documentation/uikit/reference/UIDevice_Class/Reference/UIDevice.html*

The key takeaway from this survey is that it is important, and often necessary, to keep devices separate and uniquely identified. Users may own many devices, multiple people may share devices (for example, family members), and others switch devices. Developers have different technical reasons to identify devices, but all come down to the same thing: enhancing the user experience. The developer's focus is in making the user's phone more convenient and useful.

Understanding the Existing Laws and Regulations

Regardless of how data protection is approached, it's critical to note the protections offered under existing federal and state laws and regulations. In particular, consumer-protection laws currently provide technology-neutral legal standards to address data-privacy and data-security concerns regardless of whether they arise from undisclosed hacking, phishing, inadvertent peer-to-peer "sharing" of sensitive personal files, unauthorized wifi-snooping and art contests seemingly designed to enable the reverse-engineering of children's Social Security numbers.

Currently, the FTC Act gives the FTC broad authority to act against those who misuse data, regardless of the technology used. Specifically, Section 5 of the FTC Act directs the FTC to take action against any business engaging in "deceptive" or "unfair" trade practices.[12]

The FTC's duty to halt deceptive trade practices authorizes the FTC to take law enforcement action not only when a business violates explicit promises to consumers,[13] such as violations of stated privacy policies or terms of use, but also even when a business makes material omissions to consumers,[14] such as not telling consumers about the sharing of their collected information with third parties.

Similarly, the FTC's duty to halt unfair trade practices authorizes the FTC to take law-enforcement action when business practices cause injuries to consumers that are: substantial; not outweighed by countervailing benefits to consumers and competition; and could not have been reasonably avoided by consumers themselves.[15] For example, the FTC can take action against a business's failure to report a data breach.

Finally, it is critical to understand two points about consumer-protection laws. First, the FTC has real teeth if it finds that a company engaged in "unfair or deceptive practices," including assessing injunctive and civil penalties. Second, state consumer-protection acts grant state Attorneys General even broader substantive and remedial powers than those that federal law grants to the FTC. As a result, even were resource constraints or agency capture to preclude FTC action in a

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[12] *15 U.S.C. § 45*
[13] *Id.*
[14] *FTC, Policy Statement on Deception (Oct. 14, 1983) available at http://www.ftc.gov/bcp/policystmt/ad-decept.htm.*
[15] *15 U.S.C. §45(n); see also FTC, Policy Statement on Unfairness (Dec. 17, 1980) available at http://www.ftc.gov/bcp/policystmt/ad-unfair.htm.*

particular case, 50+ law enforcement agencies would still have broad, technology-neutral authority to protect the privacy and security of consumers' data.

Consequently, the consumer-protection authority of the FTC and state Attorneys General already authorizes and requires these law enforcement agencies to patrol the Internet for companies that might violate their promises to consumers or cause them substantial harm. The FTC recently used such authority to protect consumer privacy by taking action against Google[16] and Chitika[17] for failing to properly handle consumers' information. Both companies now face twenty years of oversight and damage to their brands.

Existing consumer-protection laws thus already authorize both the FTC and state law enforcement agencies to police the entire range of products that connect to the Internet, including mobile devices, and to take action against the bad actors that ignore existing laws and will continue to ignore any future laws. This existing authority also ensures that good actors already have every incentive to behave reasonably and that bad actors have good reason to fear the existing legal consequences of their wrongdoing.

Given the existing authority of the FTC and State Attorneys General, do we need additional regulation? ACT believes this is an open question, but one where consumer privacy protection should not be viewed through a limited, technology-specific lens. Instead, thoughtful, arduous, and considered discussion must take place on the role of personal data in the economy, the true interests of consumers, and the best interaction between citizens and the providers of products and services that use their data.

Avoiding the Patchwork Problem; Dealing with Data Holistically

In periods of great technological change, both new opportunities and new challenges are created. More often than not, however, the seemingly new challenges are merely old issues illuminated under a new light.

Like the dot-com boom before it, the emergence of smartphones and mobile apps have renewed interest in the way corporations and governments collect and share data, most importantly, personal data. Yet, in both cases, these new technologies are simply bringing new light to issues surrounding the collection of personal data that has existed for decades.

There are genuine questions to be asked and considered with respect to the collection and use of personal data. How and when should people be told the data is being collected or when it is being shared? How should they be told? Should people be able to modify data that is collected about

[16] *In the Matter of Google Inc., a corporation, FTC File No. 102 3136.*
[17] *In the Matter of Chitika, Inc., a corporation, FTC File No. 1023087.*

themselves? Should people be able to delete data about themselves or otherwise control how it is used? Asking these questions only in the context of smartphones and mobile apps ignores the larger picture. The technology used to collect the data is much less significant than the important questions about the process and behavior of those collecting it.

First, the data collected by apps developers is an almost infinitesimal piece of the global collection of personal data. From credit card companies, to warranty cards, to loyalty programs, companies have been collecting data on their customers long before the Internet or smartphones came around. Not only do other companies collect the same data as smartphone apps, but they have exponentially larger collections of personal data already at their disposal. Information brokers like Epsilon and Google collect, retain, and share far more information than all mobile apps combined.

Even the collection of location data that has been singled out in recent press reports is not unique to smartphones and mobile apps. Standalone commercial GPS providers like TomTom or GPS-based safety services like OnStar collect this information on their users. Your EZ Pass technology for wireless payment of highway tolls also collects and stores location data. More recently, Google has been driving the world's streets eavesdropping on home and business wireless networks to gain the ability to find you even on your home computer or laptop. In nearly every instance, these companies may share that data with third parties.

Isolating and regulating one specific technology is not the answer to the broader questions surrounding the collection and sharing of personal data. Given the enormity of existing data collections and the number of ways it is amassed, focusing exclusively on one technology – particularly the newest and least established – is a symbolic gesture that does not solve the underlying problem, but creates the false sense that the problem has been solved and the need for thoughtful debate and policy consideration is over. Regulatory attention should be focused broadly on behavior and data usage, applying to everyone, regardless of means of collection and sharing.

Finally, regulation that focuses solely on new technology discriminates against small businesses. Whenever we are talking about new, disruptive technologies, we are most often talking about small businesses. Revenue models, customer expectations, and efficiency opportunities are all still emerging, and small businesses are the driving force. Lots of businesses start, a very small number survive, but in the end, we learn what works, and then the large businesses get involved. To stunt the growth of a new, experimental market is to discriminate against the very small businesses on which we rely to lead innovation and growth in the American economy.

Conclusion

The future of the digital marketplace looks bright for small business, so long as the marketplace remains dynamic and competitive. This is a more than $10 billion opportunity for small business across the United States. Barriers to entry in the marketplace are currently low, and our members are very excited about the future – according to ACT's board president, Mike Sax, "Programming is fun again!"

While there are important questions that need to be discussed on personal data collection, retention, and sharing, limiting this question solely to smartphones and mobile apps would be ineffectual and counterproductive.

The use of location information and smartphone IDs are providing immense value to consumers. Whether it's the ability to make dinner reservations or find directions to the nearest hardware store, our members put a value on creating a product that improves the lives of their customers.

Banning the collection of location data would essentially outlaw these beloved consumer apps while doing nothing to address the big questions about data collection and how that data is used. That is why ACT believes that Congress must take a holistic approach to privacy that does not single out any one technology, especially nascent ones. We need to outlaw bad behavior, not good technology. I hope that the committee will continue to focus the spotlight on the contribution small business makes to the future of the digital economy and the way government can do a better job to encourage that productive future. Thank you for your time and consideration on this important topic.