# The R & D Tax Credit Opportunities for Mobile Devices

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Charles R. Goulding, Jonathan Saltzman and Charles G. Goulding discuss the role of the R & D tax credit in developing and improving smartphone technology to stay competitive.

Smartphone technology is rapidly establishing itself as a staple of modern life. Nielsen recently reported that for the first time ever, the majority of cell phones in use are smartphones.[1] In fact, the worldwide smartphone market grew 54.7 percent year over year in the fourth quarter of 2011.[2] As competition grows, tech companies must continue to innovate. RIM, once the leader in smartphones, has failed to keep up technologically, and they have paid the price in market-share.[3] Tech companies investing in both software and hardware for their mobile device divisions should be aware of the R & D tax credit opportunities.

## The Research and Development Tax Credit

Federally enacted in 1981, the Research and Development (R & D) Tax Credit allows a credit of up to 13 percent of eligible spending for new and improved products and processes. Qualified research must meet the following four criteria:

1. involve new or improved products, processes or software;
2. be technological in nature;
3. be for the elimination of uncertainty; and
4. in the process of experimentation.

Eligible costs include employee wages, cost of supplies, cost of testing, contract research expenses and costs associated with obtaining a patent.[4]

## New Manufacturing Techniques

Many companies have been developing new manufacturing techniques in order to distinguish themselves from the competition and provide added value to consumers. Apple uses an anodized aluminum finish on many of their products including the iPad to provide a hard, scratch resistant surface.[5] A recently leaked image of an iPhone prototype showed that Apple may be considering using this coating on their new iPhone as well. HTC recently introduced their Micro Arc Oxidation process to their production line. By treating their aluminum cases with high voltage, their phones are five times stronger than aluminum.[6] In the glass and screen area, Corning recently introduced their Corning Gorilla Glass 2 to the market. Gorilla Glass is extremely tough—resistant to scratches, drops and bumps.

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The shift from cheap plastic to sturdier materials and casings has resulted in phones that are able to support customers who rely on their phones more and more. These chemical and engineering research expenditures potentially include qualifying R & D tax credit expenses.

## Augmenting Performance

Competitive pressure is also constantly pushing phones to perform better by being faster and having longer battery life. NVidia recently unveiled their Tegra 3 chip which boasts faster performance and better battery life. Without advances to battery life, performance innovation will come at the expense of battery effectiveness, rendering those performance enhancements far less fruitful. Effective research must make phones more powerful, limiting the effects these improvements have on power usage, while also working within the strict size parameters of the device itself. Through key R & D breakthroughs, manufacturers have been able to squeeze more powerful batteries into smaller and smaller phones. Motorola was able to put the most powerful smartphone on the market into their Razr Maxx, which is only 8.99mm thick.[7] To put this in perspective, the Razr Maxx's battery has a capacity three times greater than the original iPhone's, yet the Razr is the thinner of the two phones.

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## Software Advancements

Mobile software development has increased geometrically in recent years. Mobile devices can now tell you what the weather is, when to wake up so you're not groggy, what you should listen to, which route best minimizes traffic and much more. Apple, Google and Samsung are also all pushing their apps in the direction of voice recognition, the applications for which are manifold once the technology is perfected.

On the data management side, all major smartphone platforms are trying to bring cloud-computing to their customers. Personal documents, pictures, music and files are now all available anywhere with an internet connection. Companies must ensure their servers can handle the increasing demand and experiment with different ways to move files to the cloud. Apple's iTunes Match searches your computer for music; rather than uploading your files to the cloud they simply allow you to access their pre-hosted copies. This idea has never been implemented on such a large scale. This innovative process allows consumers to skip the upload process and access their songs immediately, while Apple benefits from a large decrease in storage volume. As Android phone manufacturers look to differentiate themselves from a competition, more companies are building their own software layers on top of Android. For example, Samsung's latest phone tracks users' eyes to keep the screen on when they are using it and has facial recognition built into its camera; neither are "stock" Android Features. The process of adding these features is expensive and, as evidenced by leaked photos and info, sometimes the end product does not make it to market. While hardware innovation is still burgeoning, new software development is equally as dynamic.

## Wireless Diversity

While the rest of the world has standardized wireless protocol and frequencies (GSM), the United States is more diverse in its offerings. Verizon Wireless and Sprint both use code division multiple access (CDMA) technologies but on different frequencies, and AT&T and T-Mobile both use GSM but on different frequencies. For consumers this means a phone designed for one wireless service provider generally does not function with any other providers. Consequently, manufacturers must produce a branded phone with different internals for each different wireless service provider. This is a difficult feat, further complicated by the fact that certain combinations of radio and SoC (system on a chip) platforms are not compatible with each other.[8] For example, Samsung's new Galaxy S III will have at least four different models. The amount of research and development it takes to produce four different yet seemingly identical phones is tremendous.

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## Additional Safeguards

For some users, gorilla glass and treated aluminum case surface finishes do not provide enough protection to support certain usage environments that may include heavy travel and outdoor needs. The company Otterbox creates super strong, high-impact polycarbonate cases to support these needs. Certain models include clear protective screen membranes. Otterbox's newest invention, the Armor Series, is drop proof, dust proof, crush proof and waterproof.[9] Another phone protection company, Zagg, uses nano-memory technology to protect screens. Their Invisibleshield product line uses patented, military grade materials; the same kind used on helicopter blades.[10] As devices become more expensive and indispensible, the market has seen a shift from fashion-minded cases to engineering-focused protection.

## Conclusion

The mobile device industry is innovating at a rapid pace. Billions of dollars are being spent on research and development, making the 13-percent R & D Tax Credit extremely lucrative to pursue. In a recent speech at Carnegie Mellon University, President Obama announced the Advanced Manufacturing Partnership, an initiative to bring manufacturing back to the states through collaboration with private, university and government resources.[11] Further, through the Plan to Win the Future, the U.S. government has recognized the fundamental role broadband and mobile devices play in the lives of Americans and the economy.[12] Companies producing these devices should be working closely with their tax professionals to build in documentation processes to their current R & D activities. Tax advisers involved in the mobile industry should monitor these developments and assist their clients in obtaining R & D tax credits.

### Endnotes

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