R & D Tax Credit Aspects of Near Field Communication

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Charles G. Goulding, Charles R. Goulding and Seann Convey explain Near Field Communication, a relatively new technology whereby two electronic devices placed in close proximity can communicate with one another. Developers of this technology should evaluate whether their work qualifies for the R & D tax credit.

Near Field Communication (NFC) technology has taken major strides this year despite being omitted by Apple on the iPhone5. Some forecasted the end of NFC when Apple elected not to include the technology in its newest phone, but other carriers have pushed forward in a major way. It now appears that NFC technology is on the brink of revolutionizing a range of commercial and social activities.

NFC is relatively new technology—it has been in development since 2004 when Sony, Nokia and Philips formed the NFC forum. The forum currently has over 150 members.

NFC involves the establishment of radio communication between two devices placed in close proximity (up to four inches) to one another. Smartphones can come equipped with NFC capability, but communication is also possible between phones and unpowered chips, called "tags." These tags can be placed almost anywhere and used in endlessly creative ways. A great deal of innovation will take place to enhance NFC's capabilities, much of it inspired by creative end-users.

The Research & Development Tax Credit

Many of the private industry and industry-supported University R & D efforts will be eligible for federal Research and Development tax credits.

Enacted in 1981, the federal 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:

- new or improved products, processes or software;
- technological in nature;

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- elimination of uncertainty; and
- process of experimentation.

Eligible costs include employee wages, cost of supplies, cost of testing, contract research expenses and costs associated with developing a patent.

On January 2, 2013, President Obama signed the bill extending the R & D Tax Credit for 2012 and 2013 tax years.

Your Phone and You

The roots of NFC technology are in radio frequency identification (RFID) which transformed the distribution industry by making every piece of inventory capable of being scanned and tracked. Similarly, NFC allows for one's phone to serve as a personal identifier. Many consequently feel that the events industry will be one of the first to be transformed by NFC, with one's phone supplanting the ticket (even the mobile ticket) as a means for entry into an event.

Closely connected is the credit card and billing industry. Starbucks, in partnership with Square, is one of the companies leading the charge to allow customers to pay via their phone. By supplanting cash and potentially also the plastic credit card, Smartphones are now literally eating into the wallet.

As Smartphones play greater and more varied roles in human life, security becomes a larger and larger concern. Key issues include the physical security of the phone, contingency plans if the phone is stolen and security of the information being transmitted to and from the phone, as well as in the phone. A great deal of innovation must take place to ensure that the phone and its uses, many of them NFC-driven, are as protected to the extent possible.[1]

User-Driven Creativity

In a popular commercial two years ago, two NFC-enabled devices were tapped together, the song playlist on one phone magically bouncing over to the other.

However, NFC-enabled chips, or tags, can be placed anywhere. Imagine a tag on a bird feeder in a popular garden, with a sign underneath that says *Am I Low on Food?* With one swipe of a Smartphone, an email can be sent to the person in charge of the feeder, or perhaps the swipe will activate the "birds" themselves to start chirping on Twitter that their food is low.

These tags are typically passive, meaning they are unpowered and only become active when a Smartphone enters its magnetic field. Consequently, tags can be placed almost anywhere and are not themselves in need of consistent upkeep. Other tags could be used to provide more data to the person swiping, such as a movie trailer that plays on a phone once that phone swipes by the relevant movie poster at a theater.

Human creativity will find even more individualized uses—a mountain biker, for example, swipes the garage door as she leaves, texting her husband "Out Biking" and activating her GPS so her location is knowable in case of emergency. It is both exciting and unpredictable to witness how individuals and small groups will find ways to use NFC-enabled phones and tags to enhance their lives. One thing is certain, however—once novel patterns of interest and usage emerge, industry will find ways to support and further enhance those uses.

Huge Growth Projections

MarketsAndMarkets.com issued a report entitled "Near Field Communication (NFC) Market: Global Forecast and Analysis (2011-2016)" which predicted that NFC in Smartphones will grow from the current single-digit level to 40 percent in 2016. Revenue from NFC is expected to grow at an estimated annual growth rate of (AGR) of 35 percent from $7.68 million in 2011 to $34.52 million in 2016.

Big Data Opportunities

Industry will also find ways to harvest the data from those many creative uses of NFC. NFC-enabled tags will provide huge streams of data which, properly analyzed, will help firms better understand their markets and define business strategies.[2] Indeed, whereas sensors can collect reams of data placed in commercially permissible locations, NFC tags, like the phones with which they will be interacting, will be generating data from places like homes and cars among others.

Even at the small and mid-sized level, many firms now have departments dedicated to Big Data analysis, often headed by a Director of Analytics. These professionals apply advanced quantitative concepts to their data, including multivariate analysis and sophisticated algorithms and are frequently highly educated in technical fields like mathematics and software engineering. The

data provided by NFC will therefore provide these professionals with unique and often unprecedented windows into consumer habits and preferences.

Conclusion

Firms developing NFC-enabled applications and products should analyze their applicability to the R & D Tax Credit. Likewise, firms engaged in advanced data analytics and solutions, as well as cyber-security, should consider what the credit may have to offer them.

Endnotes

1 Charles R. Goulding, Andrea Albanese and Jacob Goldman, *The R & D Tax Aspects of Cyber Security and Homeland Protection,* Corp. Bus. Tax'n Monthly, publication pending.

2 Charles R. Goulding, Charles G. Goulding and Jacob Goldman, *The R & D Tax Aspects of Big Data,* Corp. Bus. Tax'n Monthly, May 2013, at 15.