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POSSIBLE LEGAL IMPLICATIONS OF DISRUPTIVE TECHNOLOGIES: SELECT EXAMPLES

Abstract

LightSquared had an innovative business model – integrate its existing satellite communications services with a ground based 4G-LTE network utilizing the same radio band as its satellites. Unfortunately, that band was in close proximity to the primary GPS frequency. The GPS community feared the results if spillover from the stronger LightSquared signals overloaded or saturated GPS devices. Ultimately, after many attempts to modify and restructure its business structure and the use of its spectrum, LightSquared received court approval for a bankruptcy loan while it attempted to figure out an exit strategy. Unresolved interference concerns shut the company down, despite its initial innovative and spectrum-efficient promise.

Kymeta recently performed a game-changing demonstration of its disruptive technology. The company, operating with an experimental license, successfully demonstrated bi-directional high-speed Internet connectivity with a Ka broadband satellite using its meta-materials antenna. The antenna uses artificial materials that are engineered to manipulate electromagnetic radiation, resulting in very targeted beam-steering. The precision can be achieved using significantly smaller hardware than traditional parabolic dish antennae and/or mechanical terminals or phased array antennae and with the ability to connect literally anywhere in the world. But, will Kymeta's breakthrough be practical in the presence of interfering radio signals that might be able to externally modify the beam direction?

Clearly, technologies are changing the method and manner that spectrum is utilized today. The paper examines the current ITU and FCC regime, as well as the documentation available regarding the LightSquared case, in an effort to ascertain whether and how disruptive technologies are putting the current spectrum management regulatory scheme to the test. It will conclude with the author's recommendations.