



<< Left  
**Suebsiri Taweepon**  
 Partner  
[suebsiri.t@tilleke.com](mailto:suebsiri.t@tilleke.com)

<< Right  
**San Chaithiraphant**  
 Attorney-at-Law  
[san.c@tilleke.com](mailto:san.c@tilleke.com)

## Augmented Reality: Present and Future of IP Law

**A**ugmented reality (AR) is an information technology that has been attracting a great deal of attention and R&D investment. We know AR mostly as application software for mobile devices, in particular those with camera functions. Examples of AR technology include games or photography apps that are capable of overlaying digital contents (e.g. cartoon animation, other special effects) on the real environment as seen through the device's camera. Simply speaking, these AR applications provide predetermined contents as a response to "recognition" of something in the real world, such as human faces, shapes and patterns, and GPS coordinates.

The above examples are simple applications of AR during its debut to the masses. When AR reaches maturity, experts envision a "digitally infused" or "clickable" world, in which mobile devices or wearables (e.g. smart-watches, smart-glasses) will enable their users to download data from real objects, or post user-generated contents on those objects—exactly like what is happening with the Internet.

This advanced state of AR technology is called mixed reality (MR). Imagine a world where we can tap on a distant building to check its office hours or make a phone call, or tap on a footwear brochure to put the 3-D image of sneakers on our feet and place an order, or post a customer's review right at the doors of our favorite restaurant. Currently, there are mobile applications that offer these functions, though many are still in their early development.

### Augmented Reality and Relevant Laws

Visions of a fully augmented world have sparked spirited discussions among legal scholars and practitioners alike, as such technology would substantially change how humans interact with their community and objects in their environment. Examples of thought-provoking questions include:

- ▶ Could putting unauthorized digital "graffiti" on an actual private residence be held as a trespass offense or malicious property damage?
- ▶ Could putting a digital "bad review" upon an actual religious artifact be held as blasphemy or other religious offense?

The Thai Penal Code and existing Supreme Court decisions identify essential element of certain offenses, as follows:

- ▶ An act of (unauthorized) entry for a trespass offense.
- ▶ Physical damage or economic devaluation of property for a malicious damage offense.
- ▶ An act in any manner directed to an artifact or place of worship for blasphemy.

Thus, the answers to the first question should be no, owing to the lack of "entry" and "damage or devaluation." On the other hand, the answer to the second question is less clear—whether the wording "an act in any manner" is intended to cover an act that completely lacks physicality is likely subject to a case-by-case debate.

Laws on product regulation and consumer protection are also likely to be affected by AR/MR, as this enables, technically, anyone to digitally augment off-label information upon a product's physical package. Unapproved advertisements are also more likely to go unnoticed by authorities.

### Effects on Intellectual Property Rights

Intellectual property laws are probably among the most impacted branches of law, not only because AR/MR is a much-hyped, newfangled technology that has been attracting a great deal of funding for research and development, but also because it is a new medium.

**On patents.** To satisfy patentability requirements, a patent claim for an AR technology should be drafted carefully so that the software part is incorporated into, or working in combination with, the physical device(s) (i.e. computer-readable medium or hardware).

It remains to be seen whether the additional physical aspect of AR will help AR innovations fit better into the conventional patentability requirements, or whether the technology industry will move further away from patenting and pursue alternative or hybrid protection (e.g. copyright, protection by source code, anti-circumvention law and/or licensing agreements).

**On trademarks.** AR/MR offers trademark proprietors an opportunity to serve users with advertisements that are more customized and relevant, both to the user's personal interests and to the real-world context surrounding the user at the moment.

The downside, in some cases, is that a trademark may be projected upon an unrelated good, or an original trademark may be replaced with a third party's or competitor's trademark, or distorted, put in the wrong context, or associated with damaging messages (similar to "hater" websites). These possibilities would pose extra challenges to brand building, which in most cases relies upon a trademark's placement.

A trademark's narrow protection also adds to the problem. One potential way to counter this would be for the brand owner to think ahead of AR/MR activities and take the initiative by registering more product classes from the outset to help safeguard against the abuse of their brand/logo.

**On copyright.** Copyright works see many opportunities to be commercialized in the AR/MR environment. Compatible business models include micropayments, geographically exclusive content, and tie-ins with premium printed matters. These models are already in use in this age of mobile applications, but should be even more relevant with AR. This is because AR digital content is presented with better interactivity, intuitiveness, and immersion when integrated into physical contexts. Successful examples include AR uses in museums, art galleries, and other tourist attractions.

In addition to copyright protection, it is plausible that copyright holders will opt for a combination of licensing agreement, technological protection measures, and digital rights management, which are enforceable through contract, anti-circumvention, and computer crime laws.

On the other hand, additional forms of expression will give rise to additional means to reproduce or make derivatives of a protected original work. With increasingly popularized technologies for digitizing physical works (e.g. 3-D scanners) and materializing digital works (e.g. 3-D printers), potentially infringing activities can take on many more forms than ever. For instance, a copyright physical artwork may be scanned, made into a 3-D digital model and augmented anywhere without permission. Conversely, a copyrighted AR model may be copied and augmented elsewhere or 3-D printed without permission.

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### Evidence Collection: Challenges and Collaboration

Conventional infringement detection and evidence collection to prove damages and obtain a court's injunction could be challenging in the AR/MR context. Based on the current state of affairs, AR content is consumable only through a specific platform or app. That is, content augmented for access by one AR app is unlikely to be accessible by other AR apps. Although the issue of interoperability has already been brought up among AR developers, it does not appear to be a priority.

The most promising approach for IP rights protection and enforcement in this new environment may begin with proactive development of an IP-conscious architecture—a protection by design. This is particularly true for Thailand, which is currently striving for a value-based digital economy, yet has been lacking business models that competitively

capture and protect that value since the start of the Internet age. Closer collaboration between tech-minded lawyers, and hopefully lawmakers, and legal-minded developers is fundamental to the realization of effective business models.

### Technology: Moving Us Forward

Technology takes the initiative. Change brought on by a transformative technology regime can influence society's activities, norms and values, and eventually compel attention from lawmakers and businesses. There have been numerous historical examples of the evolving relationship between the law and technology, such as the printing press, cinema, radio, television, audio/video recorders, the Internet, mobile devices and social networking platforms, all of which bring their own unique IP implications. The oft-used word, "disruption," is actually part of a longstanding historical trend, from which both challenges and rewards have been derived. 🚲