

Digital Technologies Challenge Intellectual Property Systems and Push for Change

During a lively conversation, global leaders displayed their views on how data and AI are transforming available mechanisms and what will be the future of IP offices

The Intellectual Property (IP) landscape is becoming increasingly complex, dynamic, and relevant as economies transition to knowledge-based systems underpinned by technological growth, entrepreneurship, and innovation. Intangible assets, such as patents, trademarks, copyrights, brands, software, and research, now account for 90 percent of S&P market value.

Digital technologies are the main drivers of systemic change. Digital tools have allowed the emergence of new engagement processes and models for co-creation and co-design. Data has transformed how IP outcomes are measured and evaluated, and has enabled new business strategies. However, emerging opportunities to use data to assess IP metrics still need to be explored and leveraged. These fast-paced technological changes challenge the continuity of prevailing mechanisms and policies, as well as how they will adapt to address the different stages of the innovation life cycle.

During the Frame the Future of Intellectual Property Systems, in partnership with Lockheed Martin Corporation, on July 28, global leaders working in academia, policymaking, and the corporate sector discussed how data, artificial intelligence (AI), and open innovation put pressure on IP systems to change. Panelists also talked about the importance of education

to drive inclusiveness and increase accessibility to commercial rights and legal protections. With the right incentives, technological tools can allow more people to innovate and commercially benefit from their creations, overcoming existing gender and racial disparities.

The session collected insights from Mr. Christopher Geiger, Enterprise Risk and Sustainability Director, Lockheed Martin Corporation; Dr. Claudio Furtado, President, Brazilian National Institute of Industrial Property; Ms. Gulay Ozkan, Design Lead, EU MaturoLife, and founder, GEDS; Dr. Paul Roben, Associate Vice Chancellor Office of Innovation and Commercialization, University of California San Diego; and Dr. Noam Shemtov, Deputy Head of the Centre for Commercial Law Studies, Queen Mary University of London. Dr. Roberto Alvarez, Executive Director, GFCC; and Mr. Chad Evans, Treasurer, GFCC, and Executive Vice President, Council on Competitiveness, moderated the conversation.

The future of IP offices across the globe and the types of roles these institutions will play depend on tackling two main issues. The first is addressing and securing data-fueled innovation, and ensuring protection against cyber risks and thefts. The second is striking the right balance between the widespread distribution of

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Dr. Paul Roben

Associate Vice Chancellor – Office of Innovation and Commercialization, University of California San Diego

Participants

Dr. Claudio Furtado

President, National Institute of Industrial Property – Brazil

Mr. Christopher Geiger

Enterprise Risk and Sustainability Director, Lockheed Martin

Ms. Gulay Ozkan

Founder, GEDS Strategic Design
Design Lead, EU Maturolife

Dr. Paul Roben

Associate Vice Chancellor – Office of Innovation and Commercialization, University of California San Diego

Dr. Noam Shemtov

Deputy Head of the Centre for Commercial Law Studies, Queen Mary University of London

Hosts

Dr. Roberto Alvarez

Executive Director, Global Federation of Competitiveness Councils (GFCC)

Mr. Chad Evans

Treasurer, Global Federation of Competitiveness Councils (GFCC)

Executive Vice President, Council on Competitiveness



WATCH THE CONVERSATION

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Enterprise Risk and Sustainability Director, Lockheed Martin

new knowledge through open-source channels versus giving enough incentives for IP protection for the private sector to advance new technologies and to recover the money invested in research and development, long-term studies, and regulatory approvals.

At Lockheed Martin Corporation, data governance and stewardship are at the core of sustainability strategies. "IP falls under a priority area called 'elevating digital responsibility,' along with data privacy and protection and ethical AI principles," explained Mr. Geiger. He pointed out that data is critical to fuel AI, a tool that has been increasingly used to create IP.

Open Source and Business Models

Finding the right balance between access to IP and the protection of IP is crucial to driving innovation that benefits society. Making data sets and technologies available to everyone through open-source developments can reduce costs, increasing accessibility and inclusiveness. Corporations can also benefit from open innovation, crowdsourcing solutions to improve service performance.

As pointed out by Mr. Geiger, "open source is a social reaction to an IP problem." For him, a reasonable pathway to evaluate IP access is to focus on the customer and analyze which strategies allow the business to create maximum value. Corporations must assess if the decision to open IP fits their business model. It is possible for leading global companies to design a coupled IP strategy that covers open-source and protected information.

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Dr. Claudio Furtado

President, National Institute of Industrial Property – Brazil

IBM releases its own coding lines every year. The company shaped its business model based on implementing, setting, and integrating their systems in corporations, while maintaining IP that is relatively accessible to external developers. They also use crowdsourced feedback to improve software lines.

Another example is NASA Jet Propulsion Laboratory's Ingenuity helicopter that hitched a ride on the newest Mars rover, Perseverance. The Ingenuity helicopter runs open-source operating system Linux and flies with open-source flight software F-Prime.

Education is Key

Researchers, entrepreneurs, and creators in general struggle with high costs and difficulty in accessing IP systems. Many of them do not know or understand how patents, copyrights, and trademarks work, or do not have the legal services needed at their disposal, leading to low engagement with IP rights. Gender and racial gaps persist. In the United States, only about 16 percent of inventors are women, and fewer than 3 percent of inventors are people of color.

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Dr. Noam Shemtov

Deputy Head of the Centre for Commercial Law Studies, Queen Mary University of London

For Mr. Roben, governments and corporations need to implement a set of measures to overcome persistent social disparities and boost inclusiveness: invest in education and training, streamline IP processes, and subsidize trademarks. "To stay competitive, we need to educate society as a whole on IP and create new processes to drive collaboration, engagement, and breakdown barriers," he argued. "The secret sauce is increasing participation and diversity, while also accelerating the speed at which people can access IP."

The University of California San Diego created an incubator program called My Startup XX, which encourages diversity and entrepreneurship among women. The initiative offers workshops covering the various stages involved in the launching of a technology-focused startup. The university also designed an accelerator initiative focused on the Latin community, the Latin X Leadership Program, to expose students who identify as Latin to real-life entrepreneurial experiences.

In the field of policymaking, Mr. Furtado argues that future IP offices must play the role of raising awareness and educating people on IP. For him, it is crucial to simplify the process to boost the translation of knowledge into economic value. In Brazil, the government introduced a provisional patent option to give more time and flexibility to researchers between publishing a new thesis and requesting a patent.

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"We have to support the commercialization of intellectual property rights through the deployment of trading platforms. We also need to create awareness on intellectual property valuation", Mr. Furtado pointed out.

New Models

Many issues arise at the intersection of the latest technology developments and available IP systems. Two matters are disputable and remain unaddressed: the role of AI as a tool or an inventor, and users' participation in IP benefits when developing co-creations.

Recently, AI has been an important instrument helping researchers discover new drugs and conduct overall computer research. But if the technology continues to develop, AI systems might become autonomous, sophisticated creator platforms that generate art, music, and other copyrightable products on their own. That scenario would require adjustments and re-evaluations of IP systems. "Maybe even more broadly, AI will require us to reassess our relationship with technology as human beings," argued Mr. Shemtov. "Although I still believe that AI is still only a tool helping humans."

Overall, IP systems have been slow to catch up with emergent trends. Ms. Ozkan pointed out that although user feedback surveys are crucial for product development, IP rights do not cover end-user participation.

She remembered her experience with the creation of smart devices for older adults in nine countries. Users were constantly in the loop, providing feedback, giving ideas, and actively participating in design workshops. These interactions were crucial to improve services and products, but did not entail any commercial rights. Every participant signed a disclaimer granting the IP rights to the brand promoting the innovation challenge.

"Today, there are lots of open innovation platforms where users actively engage with brands. But there is no discussion whether the end-user could hold IP rights for any collaborative effort," stressed Ms. Ozkan. For her, sooner or later, IP mechanisms need to be updated to cover new collaborative efforts.

Today, patent protection remains complex and costly. It is a process that often only large firms are financially equipped to handle. On the flip side, entrepreneurs, creators, smaller firms, and startups without many resources tend to seek protection for trade secrets because it is simpler and cheaper. Mr. Roben suggested adopting new metrics based on outcomes to grant IP rights and implementing IP subsidies to support inventors and creators who do not have the means to pursue patent protection.