EU Presidency Conference on Intellectual Property
IP in the Age of Artificial Intelligence
WIPO Director General Daren Tang
Budapest, October 1, 2024

As Delivered

Mr. Balázs Gulyas, President of the Hungarian Research Network,

Mr. Szabolcs Farkas, President of the Hungarian IP Office,

Excellencies,

Distinguished Guests,

It is a great pleasure to be back in Budapest, and an honor to be in Hungary for the first time as the DG of WIPO. This visit is special for me as it was a son of Hungary, Dr. Arpad Bogsch, who – during his two-decades of leadership at WIPO – played a critical role in building today's international IP system and laid many of the foundations on which we carry out our work today. So being here is a way of paying tribute to the contributions of Dr. Bogsch and many other Hungarians over decades to the global IP and innovation ecosystem.

I also would like to express our deepest sympathy with all those affected by the damage and disruption caused by Storm Boris. We admire the swift and coordinated response of the Hungarian government, which saved lives and prevented further damage, and we wish Hungary a full and speedy recovery.

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Dear colleagues, Dear friends,

Two years ago, the emergence of generative AI seemed to open a new chapter for humanity. Almost overnight, ChatGPT became the fastest-growing consumer application in history, reaching 100 million users in just two months.

Bold predictions followed. Bill Gates spoke of a "revolutionary" new era. Reid Hoffman, the Linkedin founder, declared a "cognitive industrial revolution", with gen AI the "steam engine of the mind". While the venture capitalist Marc Andreessen has described AI as "our alchemy, our Philosopher's stone".

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These and others saw the beginning of a bold new age, which would redefine industries, reshape economies, and transform the worlds of work, communication, and entertainment. One VC analysis put the size of the gen AI market somewhere "between all software and all human endeavours". Goldman Sachs estimated that gen AI could increase global output by 7% in just 10 years.

Two years later, we have come down to earth a bit.

In June this year, Goldman Sachs dropped a bombshell with a new paper entitled "Gen AI – too much spend, too little benefit". Go read the paper – it is online, it is free and it is interesting. But for those of you who don't have time, these are some of the main challenges.

First, data. Early versions of ChatGPT were trained on an immense amount of data, encompassing web pages, books, and various other sources. But just like all fuels, data is finite. As large language models proliferate, some researchers warn that the well of usable data could run dry by 2026. This will cause the models to "hallucinate" – or make up things – even more, undermining reliability.

Second, resources. Initially, this was seen as an input problem, with a gap between the supply of powerful GPU chips needed to power the technology and surging demand. While this bottleneck is easing, attention is now turning to outputs, and more specifically AI's energy demands. By 2027, the AI industry could require as much energy as a country the size of the Netherlands. Already, Google's emissions have risen by nearly 50% in the past five years, largely due to its AI efforts.

Third, uses. Technology firms have invested around $1 trillion in AI-related capital expenditure. For this $1 trillion – and growing – bet to pay off, Sequoia estimates that the industry would need to generate revenues of $600 billion annually. However, there has yet to be a "killer app" that gen AI has been able to deliver, and surveys of CEOs and senior executives show increasing disappointment with the application of gen AI to deliver actual productivity gains.

And as a UN agency, I would like to point out a fourth one - fairness and inclusivity. Gen AI models require so much computing power, energy, access to data that all but a handful of the biggest tech companies in the most advanced economies can use it. Its training model is based on vacuuming up copyrighted material without permission, and moreover, its learning

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data is drawn exclusively from certain countries. Therefore, it poses issues of bias, exclusivity and risks furthering the digital divide.

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Before we swing from the peak of hype to the valley of despair, it is important to take a deep breath and examine the facts to get a more objective glimpse of not just gen AI, but of AI and digital technologies as a whole. Here are some facts we see at WIPO.

First, WIPO's Patent Landscape Report on en AI shows that the top 5 patent filers in the world since 2017 are China, the United States, the Republic of Korea, Japan and India. The UK and Germany come in 6th and 7th. China's lead is substantial – it has filed more gen AI patents than the rest of the world combined, but putting this aside, it is interesting to see that 4 out of the top 5 are Asian economies.

Second, today's AI boom is part of a much broader, decades long rise of digital technologies starting from the 1990s and accelerating in the last 10 – 15 years. For example, between 2012 and 2022, we saw a combined 6 million patent filings in computer technology, digital communication, semiconductors, and telecommunications – a 90% increase from the previous 10 years.

While WIPO's research shows an 800% rise in gen AI patents from 2017 to 2023 – we must keep this in perspective. The 14,000 gen AI filings made last year represent just *6% of* global AI patents, and around *0.4%* of all patent applications. So the larger story is the growth of all types of digital technologies, part of which includes gen AI.

Third, the future of innovation will be a combination of industrial and digital innovation. WIPO identified this trend in our GII report 2 years ago, but the best example I can share is the car, which is increasingly a sophisticated software, data and entertainment center on 4 wheels rather than an industrial machine. The Patent Landscape Report also shows the highest growth rates of patenting in the application of gen AI to areas such as life sciences, transportation, agriculture and energy management.

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Dear friends and colleagues,

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So how should the international IP system react to this? Here I believe that history offers us wisdom in an age of uncertainty.

When we look back at the history of the global IP system, we see that AI and today's digital technologies are just the latest in a long series of technological revolutions and evolutions that the IP system has undergone since the coming into force of the Berne and Paris Conventions over 130 years ago.

Since the 1880s, the IP system has witnessed an endless stream of technological advances, ranging from cars, airplanes, radio and TV, transistors, PCs, the internet, e-commerce and smartphones.

And since we are in the land of Liszt, we should also mention the impact of technology on music. In the 1970s, Hungarian musicians like Kovacs Kati, Judith Szucs, and Omega incorporated electronic instruments into music to create pop and disco hits, following larger trends in popular music where electric sounds and instruments created new musical expressions.

Throughout these seismic changes, the IP system has had to adjust and evolve – one of the last contributions of Dr. Bogsch was to usher in the WIPO Internet Treaties – but at its core, it has remained a critical tool for supporting the human innovator and creator and to connect the spirit of human inventiveness, human ingenuity and human creativity to the larger world.

Therefore, it is my belief that whether it is gen AI, or some other new form of digital technology that will emerge in the years to come, I believe that the IP system will continue to be relevant and useful if we remember to put the human being at its center.

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Dear friends and colleagues,

As a technology it has been said that gen AI will replace the human innovator or creator. That has not been my experience.

Gen AI remains a skilful replicator, but it lacks the real spark of originality and inventiveness that characterizes human innovation and creativity. We can train it on Monet's paintings to produce millions of impressionistic paintings, but it would never be able to create a Picasso.

Liszt learnt from Czerny and Salieri, yet he did not merely replicate classical music, but pushed the boundaries of music onto the doorsteps of atonality.

We should therefore see gen AI as a tool, and not elevate it into a new species or give it spiritual agency. And like any tool, we should help ensure that it is used for good, and not for ill.

We are therefore watching closely the new EU AI Act, which Hungary as President of the EU council is continuing to advance, as well as other developments in other countries, and at the UN level too.

At WIPO, we will work to support our Members to use this tool to enhance, empower and enable human innovation and creativity in three ways: first, as a global forum for dialogue and discussion, second, as a source of reliable information and advice, and third, by delivering concrete projects at the grassroots level.

It is now five years since we began our conversations on IP and Frontier Technologies. What started with a group of 50 participants, largely from developed countries, has evolved into a truly global platform, reaching nearly 9,000 participants from 170 countries. Next month, we hold our 10th conversation that will focus on the issues surrounding the output of gen AI.

Our work in the next phase is to go beyond conversations to finding more concrete ways to collaborate, and in particular in how we can be a forum for the development of global guardrails and tools that can help mitigate the risks of gen AI in undermining human creativity. One of the areas where we are exploring is in standards for watermarking as well as for "opt-out".

We are also turning the insights and information generated from these Conversations into new, practical tools. Since their launch earlier in the year, WIPO's AI Policy Toolkit and practical guide on Generative AI have been accessed over 30,000 times.

We also run bespoke projects in support of AI development around the world. In the Arab region, we recently concluded an IP Management Clinic for 22 AI-focused SMEs. Over four months, these firms received tailored training and support, equipping them to leverage IP for business growth and impact.

Similar initiatives are underway in Latin America and the Caribbean, and in four ASEAN countries. Additionally, with our partners at the International Telecommunication Union (ITU) and the World Health Organization (WHO), we have launched the Global Initiative on AI for Health to help AI entrepreneurs from developing countries use AI to address health related issues.

Common to all these efforts is a focus on real-world impact. Hungary serves as a good example of what can be achieved. For instance, the startup SEON employs AI models to combat digital fraud. While Oncompass Medicine uses AI to personalize cancer treatment and expand access to precision oncology.

But not every firm needs to build their own AI model or software from the ground up. Often, simply gaining access to these technologies can fast-track digitalization and business development.

Mario Draghi highlighted this point in his review of European competitiveness – an issue I know is also a cornerstone of Hungary's EU Presidency.

Europe's innovation challenge is not a question of technology, knowledge, or talent. Across Europe, there is no shortage of world-class universities, cutting-edge research institutions, skilled workforces, or dynamic SMEs. Last week, we released the 2024 edition of WIPO's Global Innovation Index. 22 EU economies are in the top 40, with 23 EU science and technology clusters in the world's top 100.

Rather the challenge at a systems level – how to translate the wealth of research and knowledge into actual products and services through better IP commercialization.

Here, WIPO stands ready to assist by bringing IP to communities, building IP skills, and helping innovators and creators use IP to move their ideas to market.

In the past two years, we have launched WIPO's first IP and Gender Action Plan, our first IP Youth Empowerment Strategy, and transformed how we work on the ground, rolling out over 80 bespoke projects, tailored to the needs of specific communities worldwide.

These efforts are meeting growing demand. Over the past four years, the WIPO Academy - the world's largest provider of IP education - trained over 500,000 people, while our global

network of 1500 Technology and Innovation Support Centers handled over 7.5 million inquiries.

We have also helped over 600 universities develop effective IP policies, and launched initiatives like the Baltic TTO network to support collaboration, translation and the sharing of best practices.

All these themes are evident in our work with Hungary. For instance, we recently completed a project across the Visegrad countries, raising awareness of how the PCT system helps startups, universities, and SMEs to expand into international markets. We are developing a new Joint Master's Degree with Corvinus University that will provide specialized training on IP management and commercialization strategies. And we are in the final stages of a V4 report on IP financing, which will explore how the region can lay the groundwork for enabling IP owners to use their assets to access capital and for collateralisation.

As the Draghi report highlighted, Europe's challenge is not simply about acquiring more technology, it's about reshaping institutional and financial frameworks that encourage innovation, transform it into economic dynamism, and deliver the transformative solutions we need to address global challenges.

In this sense, the process of integrating AI into Europe's industrial structure, is also a chance to further strengthen innovation ecosystems.

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In closing, gen AI, AI and other digital technologies are powerful tools that are changing our world. They pose threats and challenges like all new technologies, but also great rewards for those who use it wisely.

Our job as the IP community is to work together to mitigate the risks and find the opportunities so that these technologies are at the service of humankind, and the IP system continues to be relevant to the world.

I thank the Hungarian government for organizing this timely event and wish you all a successful conference.