



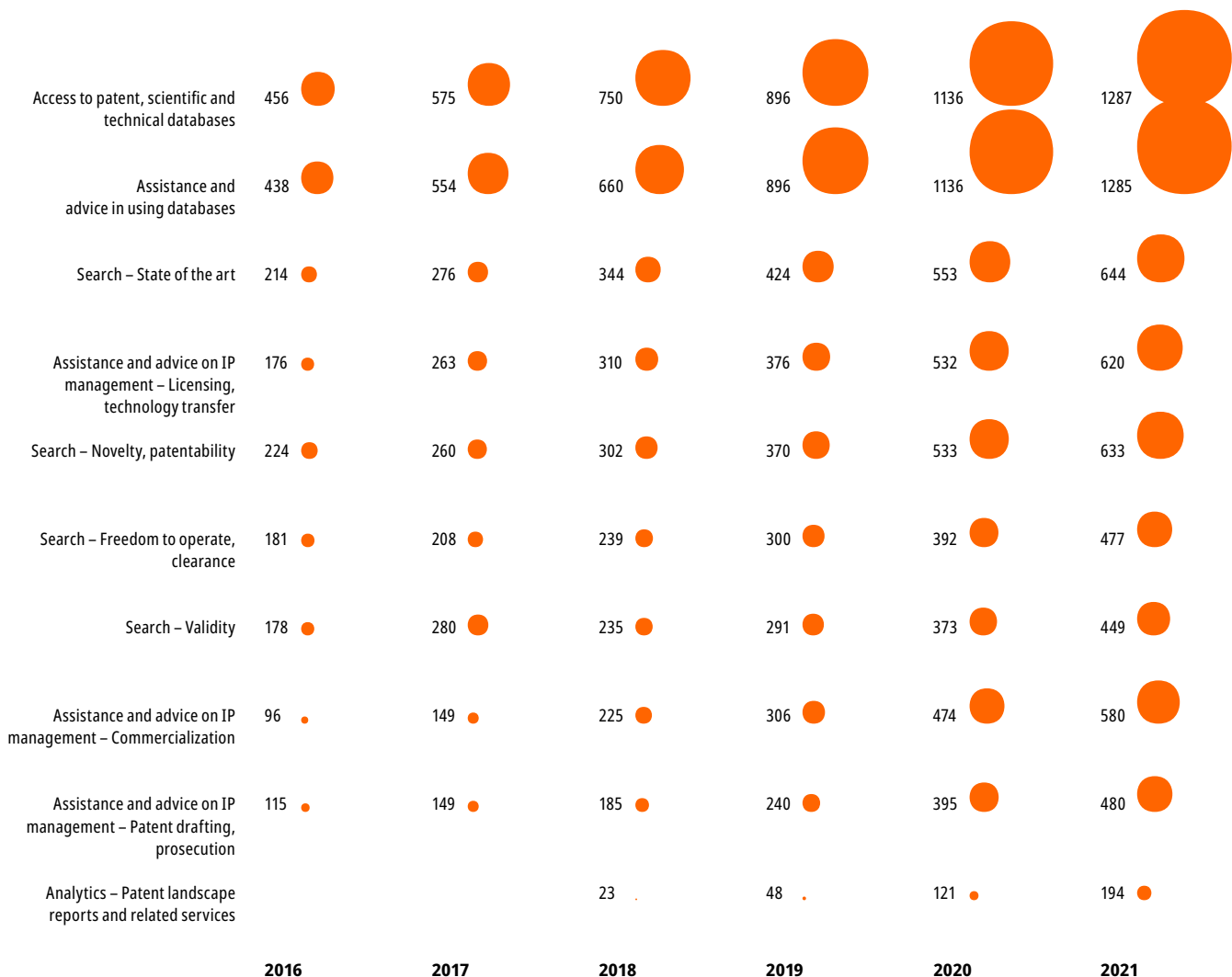
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## 1,200+ TISCs

TISCs play an important role in strengthening the innovation ecosystem where they are established, by fostering innovation and encouraging technology transfer. They provide a diverse range of services at different stages in the innovation cycle, from state of the art and novelty searches to freedom to operate searches, as well as providing advice on IP management and commercialization. Through this assistance, researchers, inventors and entrepreneurs are empowered to use strategic information to support their technological and economic development.

The TISC program is still growing; there were 1,287 TISCs in 88 countries in 2021. Despite the pandemic, TISCs around the world achieved extraordinary results. Not only have new TISCs been set up, but existing TISCs have also increased the number and type of services they offer, from basic assistance in using patent databases to value-added services in the area of patent analytics, IP management and technology transfer.

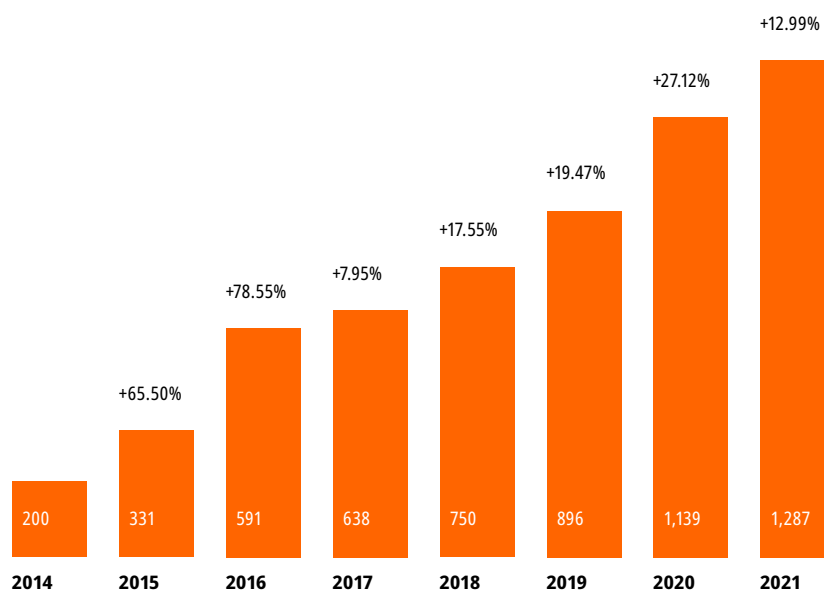
Figure 1. Number of TISCs providing different types of services



Source: TISC Directory, 2021

Since the TISC program was launched in 2009, 88 countries, of which 31 are least developed countries, have signed service-level agreements with WIPO to develop national TISC networks. In 2021, eight new countries joined the TISC program (Chad, Gabon, Ghana, Lesotho, Liberia, Syria, Kazakhstan and Turkmenistan) and two countries (Sierra Leone and Sudan) initiated the steps to sign a service-level agreement with WIPO. Existing TISC networks also continued to expand during 2021 (see figure 2) and are becoming increasingly sustainable (see figure 3).

**Figure 2. Number of TISCs and growth over time**



Source: TISC Directory, 2021

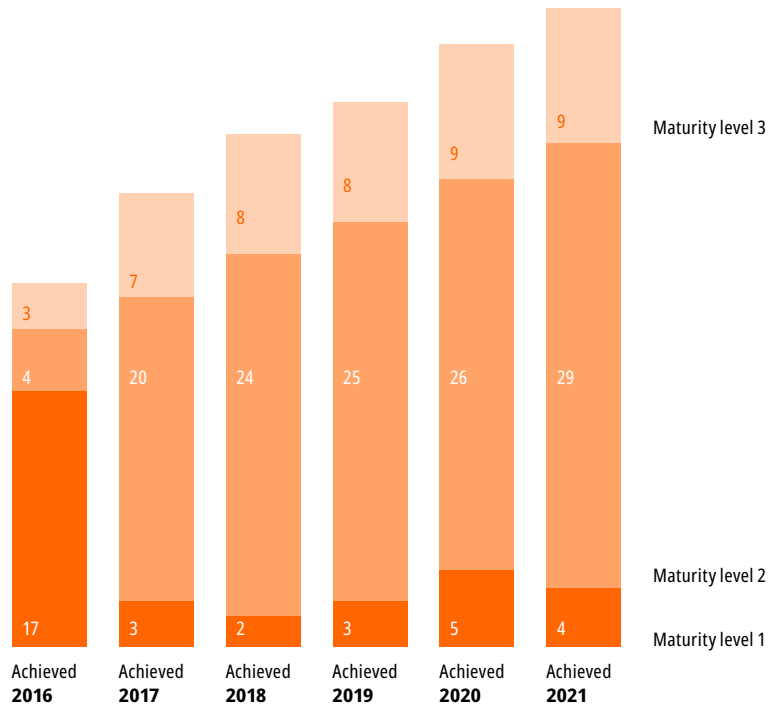
Because sustainability and the impact of national TISC networks is critical to their continuous development, maturity levels have been defined to reflect each national network's development status and the level of service it provides. These levels also provide insights into a TISC's future requirements for development to increase impact. The levels are as follows:

- Maturity level 1: Countries that have signed a service-level agreement with WIPO, have signed institutional agreements at a national level between the TISC national focal point and TISC host institutions, and which report at least annually on national TISC activities.
- Maturity level 2: Countries that meet maturity level 1 standards and which provide basic patent information searches, e.g., state of the art patent searches.
- Maturity level 3: Countries that meet maturity level 2 standards and which provide value-added IP services, e.g., drafting patent landscape reports.

Ultimately, TISCs are financially and technically self-supporting institutions to which WIPO provides advice on demand.

Out of the total of 88 TISC national networks, 42 were considered to have reached at least maturity level 1 at the end of 2021. As highlighted in figure 3, there are now four networks at maturity level 1, 29 networks at maturity level 2, and nine networks at maturity level 3.

Figure 3. TISC networks by maturity level



### Highlights from national TISC networks

The worldwide growth of TISC networks and their increasing maturity and sustainability has been accompanied by a surge in demand for TISC services. This has come from local researchers, inventors and entrepreneurs, who are the main beneficiaries of TISC support.

Following the annual end-of-year survey completed by TISCs around the world, TISCs had received an estimated 1.7 million inquiries in 2021, representing a 24 percent increase from the reported figures for 2020.

Figure 4. Number of inquiries received by TISCs



Source: Questionnaire on Progress and Needs Assessment, December 2021

**Algeria:** With 15 new TISCs in 2021 bringing the total number of TISCs in Algeria to 95, TISCs received and responded to over 6,200 requests for support and patent searches.

**China:** The fourth batch of 50 TISCs joined the TISC network in 2021. A total of 101 TISCs have been established in China to provide innovation support services such as patent searches, patent analytics, IP management and IP commercialization.

**Colombia:** The national TISC network in Colombia comprises 32 TISCs distributed across the national territory, with nine regional TISCs, two TISCs established in R&D centers, 19 in universities and two in chambers of commerce. In 2021 they received and responded to over 11,600 requests for consultation on different IP topics and issues.

**Costa Rica:** During the period under review, the TISC network responded to over 15,400 inquiries related to several modalities of IP, including patents, trademarks, utility models, industrial designs, and copyright and related rights.

**Dominican Republic:** The TISC network reported conducting 68 searches on patents, industrial designs and trademarks, and responding to over 450 requests for inquiries related to various services provided by TISCs.

**Ecuador:** In 2021, the TISC network conducted 52 state of the art searches, mainly in the areas of biotechnology, engineering, agrochemistry and pharmaceuticals/chemicals.

**Egypt:** The TISC network reported a 30 percent increase in monthly visits to TISCs, from 500 in 2020 to 600 in 2021.

**Honduras:** The TISC network reported providing 24 consultations to different national centers for entrepreneurial development on various topics, in particular patent information and access to patent and non-patent literature.

**Jordan:** In Jordan, the number of requests and visits to TISCs doubled from the previous year, from 150 per month to 300 per month.

**Kyrgyzstan:** The 24 TISCs established in all the regions of the country received a large number of requests from researchers, inventors and small and medium-sized enterprises (SMEs) in 2021, and responded to 429 inquiries about the IP legislation in Kyrgyzstan, 758 inquiries on access to and use of patent databases, 267 inquiries on access to non-patent information resources, and 65 requests for support on the registration and filing of IP rights applications.

**Mongolia:** A high increase (more than 500 percent) was recorded in the number of patent searches (855) carried out in 2021 by the 15 TISCs in the network, in comparison to the previous year (135 searches).

**Peru:** TISCs in Peru provided over 7,900 services to their users in 2021, more than doubling their objective of 3,000 for the year. Basic services are provided by 72 percent of TISCs in the country, and 42 percent also provide value-added services.

**Saudi Arabia:** The expansion of the TISC network, from 27 institutions in 2020 to 38 in 2021, was mirrored by an increase in the number of monthly visits recorded in 2021, from 41 the previous year to 99. To support TISCs in managing requests and in managing the development of knowledge and skills, the TISC network also launched an internal portal for TISC staff.

**Ukraine:** The TISC network responded to 976 requests and consultations in 2021. Regional TISCs provided 713 responses to user requests in 2021, up from 513 provided in 2020.

## TISC training and awareness-raising: supporting local innovators

In addition to expanding their innovation support services to local users, TISCs continued to dedicate significant resources to self-development and awareness-raising activities, indicating increased sustainability and maturity levels. Many activities were shifted from traditional onsite to digital formats in response to the global pandemic.

**Algeria:** The TISC network organized 90 training activities on patent databases and patent information searches, training over 1,300 participants on these subjects.

**Bhutan:** More than 200 students, engineers and entrepreneurs were trained by the Department of Intellectual Property (DIP) of Bhutan, the TISC focal point. Two TISC staff also successfully completed the Advanced International Training Program on Intellectual Property for Least Developed Countries organized by WIPO in cooperation with the Swedish Intellectual Property Office (PRV) and the Swedish International Development Cooperation Agency (Sida).

**China:** In 2021, the TISC network of China continued to offer online and onsite training to SMEs, researchers, students and other innovators, with 160,000 participants in attendance. A total of 320 TISC staff participated in WIPO distance learning courses, and over 1,600 TISC staff participated in 13 online training sessions on patent information, introduction to patent analytics, and IP rights protection and utilization. Over 800 participants from different TISCs also attended a TISC seminar to exchange their ideas on the development of the TISC network in China, and 19 case studies from TISCs were selected for inclusion in the China Intellectual Property Information Service Case Collection.

**Colombia:** The TISC network organized over 250 awareness-raising activities, reaching over 6,000 participants, and over 390 workshops, with over 10,000 participants. Training activities included various topics related to patents, trademarks and industrial designs, and TISC services relating to these.

**Costa Rica:** The TISC network organized 110 training activities related to various services provided by TISCs, with over 300 participants.

**Cuba:** The TISC network organized 18 training activities covering various issues related to IP, in particular patent analytics, technology transfer and support to SMEs in the formulation of their IP strategy.

**Ecuador:** The TISC network organized 37 training activities in 2021, reaching over 1,200 professionals and students. The National Network of Ecuadorian Research and Education (CEDIA), a member of the TISC network, also supported the organization of an IP Week around World IP Day to bring together IP experts and innovators in the country.

**Egypt:** In collaboration with the Egyptian Patent Office and local research and educational institutions, the Academy of Scientific Research and Technology organized nine online and onsite training activities and awareness-building events on the role of IP in innovation and economic development, an overview of patent databases and searches, and IP commercialization. Of TISC staff, 80 percent also followed distance learning courses offered by the WIPO Academy on intellectual property, patents and patent information search.

**Ethiopia:** The TISC focal point at the Ethiopian Intellectual Property Office provided training to universities, technical and vocational education and training institutions, and research institutions hosting TISCs on a wide range of topics, including IP, patent search, patent drafting and technical transfer. Four universities, a new technical and vocational education and training institution, and a new research institute joined the TISC network during the year.

**Honduras:** Over 200 people benefited from training organized by the TISC network in 2021. Topics included accessing and searching patent databases, support to innovation and business development (including participation of TISC focal points in the focal group on technological innovation in the national education system), and specific activities targeting startups and businesses in Honduras.

**India:** In 2021, 787 IP rights-awareness events were conducted, and a specific training session on IP licensing was organized for the TISC network in India to support the development of knowledge and capacities in this area.

**Iran** (Islamic Republic of): the Intellectual Property Center (IPC) of the Islamic Republic of Iran, focal point of the national TISC network, has identified 19 potential TISC host institutions and organized a number of workshops since the establishment of the network in 2017, with a focus on patent drafting in 2021.

**Jordan:** In addition to regular training activities, the TISC network launched an annual competition for young innovators aged 10 to 17 on industrial designs.

**Madagascar:** Despite the pandemic's impact on the activities of the TISC network, which is one of the largest in the region with 73 TISCs, it organized 20 training and awareness-raising activities.

**Malaysia:** The TISC network, which grew from 15 to 19 institutions in 2021, organized and supported 20 training activities in the country, mainly on technology transfer, IP commercialization, IP valuation and innovation during the pandemic. Over 60 TISC staff also participated in distance learning courses offered by the WIPO Academy.

**Morocco:** 1,330 members of the TISC network, including TISC staff, researchers and students were trained through WIPO distance learning courses on patents (38 percent), patent drafting (24 percent), patent information searches (22 percent), IP management (7 percent) and other IP-related online courses.

**Pakistan:** The Intellectual Property Organization of Pakistan (IPO-Pakistan), focal point of the TISC network, organized 20 capacity-building sessions on IP and patent information with TISCs. The network attracted seven new universities in 2021, which brings the total number of TISCs in Pakistan to 46.

**Peru:** By the end of 2021, 62 TISC staff had been trained on patent information, patent searches and other IP-related aspects.

**Russian Federation:** The TISC network celebrated its 10-year anniversary and organized an online meeting to discuss how to strengthen cooperation and professional growth of TISC staff, as well as how to improve the level of services provided by TISCs in 2022. A competition for educational online projects among TISCs in the Russian Federation was also held to raise awareness about IP on the internet; seven TISCs (Belgorod, Vologda, Voronezh, Kaluga, Kurgan, Nizhny Novgorod and Ukhta) submitted applications. In total, 14 webinars were also held during the year, reaching over 3,000 participants.

**Saudi Arabia:** More than 36 specialized online training programs on IP were offered to TISC staff in 2021, with over 1,000 attendees. Around 10 specialized training programs were also developed with the Saudi Authority for Intellectual Property (SAIP) Academy. IP clinics were also organized by SAIP to support the development of knowledge and skills of TISC staff, including on patent drafting, filing, licensing, commercialization and database searches. TISC staff were also encouraged to participate in the WIPO Academy distance learning programs. In 2021, Saudi Arabia represented the third largest group in terms of TISC participants in these courses.

**Tunisia:** With 12 new TISCs in 2021, bringing the total number of TISCs to 22, six onsite workshops were organized on patent databases and patent information searches, training over 100 participants.

**Ukraine:** In 2021, the central TISC organized 13 events and webinars, and local TISCs organized 39 events and training activities. The TISC network also promoted the participation of Ukrainian institutions in Research4Life, a joint initiative of several United Nations agencies including WIPO's Access to Research for Development and Innovation (ARDI) program, which aims to provide institutions in lower income countries with access to academic and professional peer-reviewed content.

**Uzbekistan:** With eight new TISCs established in 2021, bringing the total network to 28 members, 47 training seminars were organized to train TISC staff on patent databases and patent information search, and to strengthen their knowledge of patent drafting and filing procedures.

## Regional initiatives scale up worldwide impact and reach

Regional cooperation has been important in strengthening national TISC networks and increasing their impact and reach. Initiatives facilitating the exchange of experiences and best practice to help TISC networks become more efficient and deliver targeted services have flourished globally. Networks were established in Africa, Asia and the Pacific, and Latin America and the Caribbean, and ongoing discussions were held to strengthen cooperation in other regions, for example among Arab countries and countries in Central Asia.

In September 2021, WIPO organized an online Sub-Regional Meeting for the Development of TISC Networks in **Central Asia** in collaboration with the State Agency of Intellectual Property and Innovation under the Cabinet of Ministers of the Kyrgyz Republic (Kyrgyzpatent). Representatives from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan participated in the meeting and shared experiences and lessons learned in establishing and managing national TISC networks, aiming to increase exchanges among TISC networks in the region.

In October, WIPO organized a virtual training course for members of the regional network in **Central America and the Dominican Republic (CATI-CARD)** – Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama – in cooperation with the Registry of IP of Guatemala. The course focused on freedom to operate search and on using inventions in the public domain, supported by digitally available teaching resources such as WIPO guides. Over 70 participants (mainly from universities and research and development centers representing the different national networks) attended the event.

2021 also marked the launch of the first-ever virtual Global TISC Conference, jointly organized in collaboration with the **China National Intellectual Property Administration (CNIPA)** from November 29 to December 1. With more than 950 participants from 98 countries, the conference explored the role of TISCs in facilitating technology transfer and in contributing to technology-based solutions to social and economic issues faced by communities worldwide, with inputs from leading experts and representatives from TISC networks, academia, industry and innovation players in technology transfer structures. The conference also provided an opportunity to share experiences and best practice for improving the effectiveness and sustainability of TISCs, and explored how to deepen their networking on a global scale. A video available online and launched at the virtual Global TISC Conference also compiled greetings and contributions from over 100 TISCs from 25 countries.

Bilateral initiatives also strengthened cooperation in TISC networks, and one such initiative was the collaboration between the **Russian and Kyrgyz TISC networks**, where the TISC Association of the Russian Federation supported a roundtable on “Intellectual property as a regulator of the quality of education and the economy of science-intensive technological development of universities” in Kyrgyzstan. The Federal Institute of Industrial Property (FIPS) also organized, together with the Autonomous Non-Profit Organization “Electronic Education for the Nanoindustry (ANO “eNano”)” – an online seminar on “Intellectual Property Protection Strategies: Identifying and Solving Problems, Building a Management System”.

## TISCs as catalysts for filing patent and other IP rights applications

Many TISC networks reported a steady growth in patent applications filed with the support of TISCs, thanks to the increased number and quality of services provided to local researchers and innovators.

From research and development to IP creation, product and service design, and value creation, TISCs offer a range of services that can benefit innovators including SMEs at various stages of the innovation process.

On April 26, 2021, World Intellectual Property Day shone a light on the critical role of SMEs in the economy with the publication of case studies telling the stories of SMEs around the globe that had used IP rights to build stronger, more competitive and more resilient businesses.

One such case study showed how Qingdao Aibo Detection Technology Co., Ltd, an SME based in Qingdao, **China**, which produces and sells medical devices, biological testing products and in vitro diagnostic reagents, greatly benefited from the support of the TISC in Qingdao Municipal Intellectual Property Service Center. It generated value from its IP and made IP a central component of its business model, with a portfolio of 31 granted patents and utility models and 13 pending applications. By turning IP into capital to obtain financial support, the company achieved robust and sustainable development (read the full case study here).

**Algeria:** 50 percent of patent applications and 65 trademark and design applications were filed with the support from TISCs in 2021.

**Benin:** The TISC network of Benin organized training for innovators and startups on creativity, innovation and IP commercialization as well as a number of awareness-raising activities throughout the country, and recorded an increase in the number of patent and trademark applications filed with the support of TISCs in 2021.

**China:** The TISC network of China is dedicated to supporting inventors in filing patent and other IP rights applications. As examples, the TISC of Jiangsu University supported one of its research team on agriculture equipment by designing eight patent portfolios and filing 125 local patent applications, as well as 16 Patent Cooperation Treaty (PCT) applications. The TISC of Hainan Normal University National University Science and Technology Park offered free services on filling trademark, patent and utility model applications for enterprises. The TISC of Guangdong Intellectual Property Protection Center helped 187 enterprises to obtain geographical indications that covered 35 products among 14 cities in Guangdong province.

**Colombia:** The TISC network filed 109 patent applications, 259 industrial designs applications and 1,972 trademark applications in 2021.

**Costa Rica:** In Costa Rica, 627 new patent applications in different fields of technology (chemistry, mechanics, pharmaceuticals and new instruments) were filed through the TISC network.

**Dominican Republic:** In 2021, 10 new patent applications and utility model applications were filed by the TISC network.

**Ecuador:** Nine patent applications, one utility model and three industrial design applications were submitted to the National Service of Intellectual Rights (SENADI) through TISCs.

**India:** In 2021, 332 patent applications were filed – an increase of 23 percent since 2020. Additionally, 403 applications for trademarks, design rights and copyright were also filed.

**Jordan:** In 2021, residents filed 39 patent applications and 17 PCT applications.

**Morocco:** Over 150 patent applications (including national and PCT applications) were filed with the support of TISCs in Morocco in 2021.

**Pakistan:** In 2021, 422 patent applications were filed by indigenous inventors in Pakistan, of which 184 were filed by institutions within the TISC network.

**Peru:** TISCs supported the filing of 295 resident patent applications in 2021.



**Philippines:** IP filings among TISCs in the Philippines bounced back from a slump in 2020 to approach pre-pandemic levels, with 1,208 filings in 2021, of which 197 were for patents, 565 for utility models, 96 for trademarks, 69 for industrial designs and 281 for copyrights. TISCs in the Philippines succeeded in commercializing 64 IP assets, including 15 patents.

**South Africa:** Over 1,000 patent and 900 design applications were filed by residents in 2021, with the support of the TISC network.

**Uganda:** In Uganda, while there was a decrease in the overall number of patent applications due to the pandemic, an increase was reported in the filing and granting of utility models.

**Ukraine:** About half (49.8 percent) of the requests to the central TISC were for trademark rights, with the rest comprising issues related to doing business as an SME (funding sources, product distribution, domain disputes, etc.) and other IP rights.

**Uzbekistan:** TISCs provided advice and over 300 consultations on IP applications in 2021, resulting in 262 patent applications filed with their support and 104 being granted patents.

## TISCs expanding the depth and range of their services

The number of sustainable national TISC networks and the demand for TISC services continues to grow. At the same time, TISCs have been expanding their range of services to help local users better exploit their innovative potential throughout the stages of innovation. Technology transfer, commercialization and IP management support services in particular are creating real value, as evidenced by a rise in the number of TISC initiatives to help local researchers, inventors and entrepreneurs bring inventions to market.

**Botswana:** In addition to training on IP and commercialization organized by the Botswana Innovation Hub for the TISC network, TISCs had their first training activity on the WIPO Training Needs Assessment (TNA) Manual and Toolkit (see Useful links) to help them assess training needs in the area of IP management and technology transfer and establish training plans for the various stakeholders involved in the national innovation value chain.

**China:** The national TISC network continued to actively facilitate IP commercialization and utilization. In 2021, TISCs in China received and completed over 3,000 technology transfers. The TISC of Yunnan Institute of Science and Technological Information also developed a China South and Southeast Asia International Technology Transfer Trading Platform to enhance cooperation between domestic and foreign enterprises, research institutions, universities and technical experts.

**Cuba:** The national TISC network reported the preparation of patent landscape reports on state of the art searches in the fields of electronics, waste treatment, oil, chemistry, public health and pharmaceuticals, and renewable energies.

**Ecuador:** The National Network of Ecuadorian Research and Education (CEDIA), a key member of the national TISC network, publishes a regular technology watch magazine (*CONNECT*) that monitors developments in various areas of science and technology to inform research, business and policy decisions, and support technology transfer in these areas.

**Guinea:** The Industrial Property and Technological Innovation Service as well as the Higher Institute of Technology of Mamou (IST) of Guinea shared their experience in developing an automatic health protection kit, which was instrumental in the fight against COVID-19 in Africa during the hybrid 27<sup>th</sup> session of the Committee for Development and Intellectual Property (CDIP), which was attended by more than 80 member states of WIPO.

**India:** TISCs established 88 IP rights cells in academic institutions across India. The TISC hosted in the National Research Development Corporation in Visakhapatnam signed 13 technology transfer

agreements in 2021, and the TISC hosted in the Punjab State Council for Science and Technology (PSCST) successfully transferred a patented “hybrid kiln” technology to 20 industrial partners.

**Kyrgyzstan:** TISCs will play an active part in the implementation of the Kyrgyzpatent project for the development of business incubators and startup accelerators based in universities and research institutes of Kyrgyzstan to support youth innovation projects and startups.

**Madagascar:** The TISC network evaluated 235 medicinal plants, of which 76 were for the treatment of respiratory diseases and 159 were for the treatment of diarrhea.

**Morocco:** Seven out of the 53 TISCs in Morocco joined the TISC 2.0 Convention, which focuses on developing value-added services in the area of technology transfer and commercialization. IP policies for universities and research centers were also at the heart of Morocco’s action plan in 2021 after a successful pilot project in 2020 with four institutions. In 2021, 14 institutions received support to draft their IP policies. Eleven TISC staff also provided pro bono legal assistance and support on patent drafting in the framework of the WIPO Inventor Assistance Program, which aims to help inventors with limited financial means in participating countries such as Morocco.

**Pakistan:** TISCs contributed to the commercialization of 31 products/technologies/designs developed by researchers in TISC host institutions, including by providing advice on IP protection and management strategies.

**Peru:** With an increase in the patenting activity of TISCs, the TISC network will increasingly focus its training on technology transfer, IP commercialization and marketing, and will strengthen partnerships with industry to achieve technology transfer that meets market demand.

**Philippines:** The Intellectual Property Office of the Philippines (IPOPHL) rolled out its ITSO 2.0 program, providing new guidelines for the operation of TISCs in the Philippines and clustering TISCs into Bronze, Silver, Gold, and Platinum groups in line with services provided and results achieved. TISCs in the Platinum group, for which nine TISCs qualified in 2021, must have drafted and filed at least seven patents and successfully commercialized an IP asset. TISCs in the Philippines succeeded in commercializing 64 IP assets, including 15 patents, in 2021. New guidelines for state universities and colleges in the Philippines launched by the Commission on Higher Education, supporting and rewarding IP protection and commercialization, together with existing Institutional IP Policies in place among all TISC host institutions are expected to reinforce IP filing and commercialization.

**Russian Federation:** TISCs worked to carry out a coordinating function related to the innovative and technological development of the regions in the Russian Federation, including studying the technological profile of the region, assessing potential technological areas for further financing, and forming a forecasting system for industries (markets) of high-tech products (goods and services).

**South Africa:** With two new TISCs joining the network in 2021, bringing the total number to 18, and with 15 more in the pipeline, the network focused its training of TISC staff on IP commercialization and technology transfer, and established a roadmap for future developments in this area.

**Ukraine:** TISC staff were involved as experts in a project for creating a digital platform for the commercialization of IP rights, and participated in joint discussions between the Ministry of Economy Reform Support Team, the Ministry of Digital Transformation and state enterprise “Prozorro”.