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Technology Arbitration Revisited

Gary L. Benton* Steven K. Andersen†

I. Beyond the First Decade of Technology Arbitration

Technology arbitration has undergone rapid growth and evolutionary development in the past decade. In 2010, the words "technology" and "arbitration" were rarely found together in the same sentence. Today, in 2020, technology arbitration is widely accepted and routinely relied upon—both in the U.S. and internationally—for resolution of a broad spectrum of technology-related disputes.

Growing reliance on technology arbitration comes as no surprise as it is a practical and effective fit for a sector that benefits from a dispute resolution process offering specialized expertise, efficiency, privacy, and international neutrality and multinational enforcement.

The world has witnessed a dramatic evolution of technology arbitration in the past decade to encompass new technologies. The expansion of the internet into mobile communications, social networking, and cloud data storage and platforms has generated many new subjects for arbitration disputes. Some of these technologies have worked their way into how arbitrations are conducted.

*Gary L. Benton is an internationally recognized arbitrator with expertise in international business, private investment, IP, technology, and emerging growth matters. He serves on the AAA and ICDR Panels. He is also the founder and currently serves as the Chairman of the Silicon Valley Arbitration and Mediation Center (SVAMC), a nonprofit educational foundation based in Palo Alto, California. Website: www.garybentonarbitration.com Email: gary@garybentonarbitration.com

†Steven K. Andersen is a Vice President of the American Arbitration Association and its International Centre for Dispute Resolution (AAA-ICDR®). At ICDR he is responsible for the complete range of international dispute resolution services offered by ICDR and interacts directly with lawyers in corporations and law firms throughout North America. He leads ICDR's efforts in various industry sectors, including technology. Website: www.adr.org Email: AndersenS@adr.org

Technology has also penetrated a broad array of commercial sectors beyond IT, digital media, telecommunications, and biotechnology. New implementations of technology are found in personal and business communications, ridesharing, self-driving vehicles, home security, virtual assistants, fitness, and online retail, to name a few. The Internet of Things (IOT) resides in our cars, in our homes, and on the streets and engages in silent surveillance when we are awake and asleep.

Many industries outside the traditional technology sphere, including construction, energy, and manufacturing, now have to not only use technology to stay competitive but need to innovate new technologies to stay ahead in their own markets. Markets can be turned upside down by disruptive technologies that were previously unimaginable.

Not surprisingly, with the spread of technology across nearly all business sectors, data breaches are on the rise, and there are growing numbers of cybersecurity arbitrations. Data privacy is also in focus due to legislative developments in the EU, in the U.S., and elsewhere around the world.

What captures the most significant attention are next-generation technologies, among those blockchain; developments in biotechnology; predictive algorithms; and, of course, artificial intelligence (AI). Hardly a day passes without another article on how artificial intelligence will fundamentally change our lives and the workings of arbitration—or perhaps not. We will undoubtedly see a growing focus on quantum computing and its potential impact on arbitration as it become better understood in the decades ahead.

In this article, we consider the state of technology arbitration, where it has come from and where it is going. We consider its evolution over the past decade, its value, and its growing reach. We consider where it has proven to work and where it has yet to make impacts, as well as procedural innovations that have been made along the way. We also consider new and developing technologies that have drawn interest in the past decade and are promising to change our tomorrow.

II. The Data

The American Arbitration Association along with its international division, the International Centre for Dispute Resolution, maintains a significant caseload of technology disputes. In fact, the technology caseload has grown dramatically, in terms of filing frequency and claim amounts.

In 2017, the AAA-ICDR had 385 technology cases with claims and counterclaims totaling $1,120,468,412. In 2018, the AAA-ICDR had 380 technology cases with claims and counterclaims totaling $2,734,575,638. In 2019, the AAA-ICDR had 405 technology cases with claims and counterclaims totaling $1,280,041,712. This change reflects not only the proliferation and variety of technology issues across the economy, but also a cultural shift, with technology companies adopting mediation and arbitration to help resolve their international and domestic commercial disputes.

III. The Benefits and Value of Technology Arbitration

Technology arbitration shares many of the virtues of commercial technology—including the potential for time and cost savings compared to litigation—but it goes further in offering benefits particularly suited to technology-related disputes—including specialized expertise, increased privacy, and international enforcement.

A 2017 study by the Silicon Valley Arbitration and Mediation Center, a nonprofit educational foundation supporting the technology industry and technology ADR providers, was directed to understanding technology sector views regarding litigation and arbitration. As part of the study, a survey was distributed to corporate counsel, law firm counsel, neutrals, and users in the technology sector, representing wide expertise in technology business and law. Most of the respondents were U.S.-based.[1]

According to the study results, cost, time to resolution, and inexperienced and unqualified decision-makers top the list of challenges with litigation involving technology. Cost was viewed as the top problem with over 64% of the survey respondents listing it as one of the top three problems

[1]Gary Benton, et al., *Silicon Valley Arbitration and Mediation Center and Global Technology Dispute Resolution Council Survey Report* (2017).

with litigation. Time to resolution ranked a close second at 57% and inexperienced and unqualified judges came in third at 46%.

Overall, these results were not unexpected. Technology litigation is complex and costly. Litigation can be unpredictable when decided by judges and juries with limited technology industry and technology law expertise. Legal fees for major technology company patent disputes in the U.S. range from $3 million to $5 million according to AIPLA studies.[2] Major litigations typically take three to five years to reach a final judgment and routinely involve a lengthy appellate process. From an international perspective, overly intrusive discovery in U.S. litigation and the limited international reach of court judgments are additional concerns.

The top benefits of arbitration were reported to be specialized expertise, time savings, and privacy. According to the SVAMC survey results, having specialized/expert decision-making is the greatest benefit of arbitration, with 76% of the survey respondents listing it as one of the top three benefits. Time to resolution ranked strongly as the second top benefit of arbitration at 54%. Increased privacy ranked third at 40%. Streamlined processes and flexible procedures were also identified as top benefits by over 35% of the survey respondents.

The study results show that specialized expertise is considered the most important benefit of technology-related arbitration, but a broad range of other benefits were identified. The majority of respondents recognized the opportunity for faster resolution of disputes in arbitration as a top benefit. Also many respondents highly valued that arbitration allows the parties to specify procedures in their arbitration clause through the selection of arbitration rules, by stipulation of counsel, and through the assistance of a trained and skilled arbitrator.

The survey respondents' focus on privacy likely reflects both a distaste for public court proceedings and an industry concern for protection of confidential business information and trade secrets. Whether an arbitration is automatically confidential varies by jurisdiction and rule; however, increasingly, companies engaged in technology-related arbitrations will include a

[2] AIPLA, *Report of the Economic Survey*, 34 (2013).

confidentiality provision, and arbitrators will routinely enter confidentiality orders.

Factors associated with the sector's historical ambivalence to arbitration, particularly concerns over arbitrators exceeding the scope of their authority and perceived limitations on the availability of injunctive relief, ranked low in terms of areas where improvement in arbitration was needed. This suggests that technology companies may be increasingly accepting of the use of arbitration to resolve disputes and appreciate that injunctive relief in arbitration, as well as emergency and expedited procedures under various rules, is available.

Despite the benefits of arbitration, the study showed room for improvement. Although time to resolution is viewed as a benefit of arbitration, the largest percentage of respondents, over 62%, said arbitration could be better with even shorter time to resolution. Survey respondents also identified the need for more qualified/specialized decision-makers and lower costs in arbitration to be among the top three ways to improve arbitration involving technology companies. Over 39% of the respondents said less discovery would be a top way to improve arbitration compared to less than 4% who said more discovery would be a top improvement. Undoubtedly, views on discovery vary considerably outside the U.S. but it remains clear that putting appropriate limits on information exchange is viewed as a positive.

The technology sector's views regarding U.S. and international arbitration are evolving, and we can expect further change as companies in the U.S. confront the cost and unpredictability of U.S. court proceedings and companies in other regions reject U.S. courts and press for resolution in local forums. The likely result will be increased use of technology arbitration for both domestic and international disputes.

IV. Expansion Beyond Technology Licensing Disputes

A. Commercial Technology Disputes

Given that nearly all arbitrations arise from a contract relationship, technology-related arbitrations have historically centered around technology development and distribution contracts, most notably license agreements as well as research, joint venture, distributor, and sales agreements. These

agreements concern core transactions for technology companies: creating, protecting, and selling technology. While such agreements still represent the largest base for technology arbitrations, technology arbitration has grown to extend far beyond these core commercial agreements.

As discussed above, in addition to their scope, the volume of technology arbitrations is noteworthy. It is a reflection of the influence of technology on commerce today and the increased acceptance of arbitration to resolve a wider array of disputes.

Traditional U.S. arbitration, focused on efficient out-of-court resolution of small commercial disputes, has had a solid trajectory since the passage of the Federal Arbitration Act in 1926. In the international arena, arbitration of large-scale international project finance, energy, and construction projects is also well-established given the need to resolve disputes in a neutral arena in an objective and fair manner. International arbitration has experienced rapid growth following the widespread adoption of the UN Convention on the Recognition and Enforcement of Foreign Arbitral Awards ("1958 New York Convention"). Technology disputes typically fit somewhere in between these extremes of small commercial disputes and international mega-project disputes. Commercial and related intellectual property disputes with claim amounts ranging from $1 million to many hundreds of millions of dollars comprise the heart of technology arbitrations.

The growing acceptance of arbitration to resolve technology disputes is part of a larger movement by middle-market companies and others with mid-sized disputes to rely on arbitration in areas typically reserved for the courts. Other industries, including the construction and energy industries, have readily embraced arbitration for their owner reasons. The technology sector's embrace of arbitration was slow to start given the sector's initial affection for the U.S. courts but it is moving rapidly forward, and with good reason given the globalization of the sector and the opportunities for expert decision-making, efficiency, privacy, and international enforcement offered by arbitration. Accordingly, the volume and scope of contract-focused technology-related arbitration is expected to increase.

As detailed below, the types of technology disputes within recent history include disputes involving software implementation in a wide array of home,

office, and industrial implementations, including mobile and cloud devices, cryptocurrency and other blockchain technologies, biotechnology, and other patented implementations of new technologies. While many of these disputes arise between technology companies, a growing number of disputes involve companies that are outside the technology sector but are required to use technology to conduct business activities. Accordingly, commercial technology claims now arise in almost every industry sector.

B. Fair, Reasonable, and Non-Discriminatory Licensing Terms

Companies that rely heavily on technical standards have long focused on the advantages of arbitration. Prompted by U.S. and EU judicial and regulatory decision making, it has become routine in the past decade to turn to arbitration for resolution of disputes involving patent owners who participate in standards setting activities, particularly in the telecommunications field, to determine licensing of those standard essential patents (SEPS) to implementers based on fair, reasonable and non-discriminatory (FRAND) licensing terms. The AAA-ICDR and other providers offer specialized programs specifically designed for these disputes. The AAA-ICDR created Final-Offer Arbitration Supplementary Rules in 2015 based on feedback from construction industry professionals to implement last best offer arbitrations. These supplementary rules can be useful in resolving FRAND rate disputes on such last best offer bases.[3]

C. Technology Investment and Acquisitions

In addition to commercial and related licensing disputes, arbitration is increasingly relied on for corporate investment disputes relating to technology transactions. These transactions include investment agreement disputes, such as transactions involving early stage investors and venture capital firms, partnering disputes including joint venture arrangements, and acquisition and later stage financing disputes including M&A, IPOs, and private equity transactions. Tech M&A has become increasingly reliant on arbitration to

[3]AAA-ICDR, Final Offer Arbitration Supplementary Rules (eff. Jan. 1, 2015), https://www.adr.org/sites/default/files/FinalOfferSupplementaryArbitrationProcedures.pdf.

resolve earn-outs and accounting disputes. As well, the cross-border nature of many technology investment, joint ventures, and acquisition transactions benefit from a fair dispute resolution process that is not subject to the possibility of unbalanced decision-making by the courts of one party to the transaction.

D. Technology-Related Employment and Consumer Contract Disputes

The U.S. technology sector has readily adopted arbitration for an array of employment and consumer disputes. There is significant controversy surrounding reliance on so-called forced or mandatory arbitration clauses with wage employees and consumers, particularly with respect to class action waivers. To date, legislative and judicial efforts to limit the protections recognized by the U.S. Supreme Court have been unsuccessful. Nonetheless, a number of large technology companies have agreed to waive arbitration for various employee claims. The AAA has also developed specialized rules to ensure fairness in employee and consumer arbitrations.

The use of arbitration to resolve executive employment and compensation disputes, including stock option plan disputes, with founders and company executives, particularly in conjunction with venture financing arrangements, is now widely accepted. These negotiated contracts offer companies and their executives swift and private dispute resolution.

V. Intellectual Property and Technology Competition Claims

Technology arbitration has moved beyond licensing issues and related commercial disputes, with a growing focus on core intellectual property (IP) disputes. In the past, arbitration of core IP centered around website domain name disputes, an important field but one with limited technical application. The focus of IP disputes has changed dramatically to reach trade secret, copyright, and patent validity and infringement disputes in a growing number of jurisdictions. These cases are often high stakes, involving complex fact and legal patterns, and require technical expertise.

A. Trade Secret Claims

Trade secret disputes, when based on a contractual underpinning, are ideally suited to the private nature of arbitration. Contract-based trade secret claims are routinely conducted in arbitration proceedings to take advantage of the focused decision-making and privacy and confidentiality protections available in arbitration.

The enactment of the 2016 Defend Trade Secrets Act (DTSA),[4] creating federal question jurisdiction for trade secret claims, has changed the dynamic for handling these claims in court; however, the patchwork of state trade secret laws permeates DTSA decision-making, limiting its utility. More importantly, federal jurisdiction does not avoid concerns over non-technical decision-makers and confidentiality risk. In addition, courtroom litigation may lead to a lengthy process, including appeals, that will not provide the timely relief required to meet market demands.

There will always be parties who prefer the public airing of trade secret claims in court, particularly in high-profile cases against foreign parties. However, for most companies, resolution in arbitration, even by submission where there is no existing arbitration agreement, offers a better recourse for efficient and balanced dispute resolution.

B. Patent Validity and Infringement Claims

Reliance on arbitration for U.S. patent claims continues to rise. The U.S. Patent Act was amended in 1983 to provide that any arbitration clause contained in a patent agreement shall be presumed valid, irrevocable, and enforceable.[5] Accordingly, patent arbitration is increasingly common where claims arise from a contract relationship.

There are limitations on patent arbitration in some foreign jurisdictions, particularly with respect to validity claims. The U.S., France, and Belgium are among the few countries that expressly allow for arbitration of patent disputes; Germany and Canada appear to favor arbitration but there re-

[4] 18 U.S.C. § 1836.

[5] 35 U.S.C. § 294(a).

mains uncertainty in many other jurisdictions.[6] Several jurisdictions, notably China, refuse to recognize the arbitrability of patent claims.[7]

U.S. litigation is not a solution to the international validity objection as U.S. court judgments are not entitled to enforcement outside the U.S. and typically have little, if any, consequence outside the U.S. The U.S. has no treaties providing for enforcement of U.S. court judgments, and reliance on local laws providing deference may prove illusory. In nearly all jurisdictions, filing a new litigation from the start is the required course for relief. Likewise, the alternative, patent litigation in other jurisdictions, can be an unrewarding process. A foreign patent litigation will be addressed to the locally registered patent, considered under local law, and limited in context to the local jurisdiction. Moreover, foreign parties may have concerns about local court practices. While there is some consistency in the West, patent litigation practice varies considerably by jurisdiction, particularly as between common law and civil law jurisdictions. Typically major disputes involve separate litigations in major markets. Results can vary considerably.[8] Notably, China has gained a reputation within the patent litigation bar for quick results, but the quality and integrity of those results has been questioned.

The non-contractual basis for many patent infringement claims and the limitations on arbitrability in the international arena have limited reliance on patent arbitration for many non-U.S. cases. On the whole, U.S. and EU resolution of patent validity claims is a workable solution, particularly so in

[6]Ngan Anh Phan, *Arbitrability of Intellectual Property Related Disputes: Necessity and Arguments*, 10 (2019), https://www.academia.edu/38242470/ARBITRABILITY_OF_INTELLECTUAL_PROPERTY_RELATED_DISPUTES_NECESSITY_AND_ARGUMENTS.

[7]*Id.*

[8]The *Apple v. Samsung* smartphone patent dispute is a case in point. The dispute, dating back to 2010, was referred to as the "patent trial of the century," and later as the "case that never ended." The smartphone design dispute involved over fifty litigations in a dozen countries. Ultimately, the parties abandoned the non-U.S. cases, and the U.S. cases were settled after eight years of appeals and remands. *See* Gary Benton & Rachel Koch, *The Android Wars: International Technology Arbitration in an Alternate Universe—A Case Study of* Apple v. Samsung, *in Contemporary Issues in International Arbitration and Mediation: The Fordham Papers*, 335 (Arthur W. Rovine, ed. 2015).

the U.S. where factual issues patent disputes would otherwise be resolved by a jury with no experience in the technology.

For international disputes, international arbitration still remains the best recourse, at least where there is an opportunity to enforce the award in a jurisdiction that allows arbitration of patent disputes. In practice, many companies address the problem by contracting for arbitration applying patent determinations under U.S. law.

C. Technology-Related Copyright Claims

Technology-related copyright claims are also well suited for arbitration and continue to be addressed in arbitration.[9] It has long been established in the U.S. that computer code may be entitled to copyright protection and, additionally, for patent protection when it meets the statutory requirements for patentability. A particular advantage of arbitration is that it allows for increased flexibility for expert witness evaluation and presentation. As with patent claims, experts can focus on the merits and present to arbitrators skilled in the field, using hot-tubbing and other techniques, rather merely testifying to jurors who have little technical understanding.

Although copyright protection extends broadly to code, imprinted silicon such as memory chips, and screen displays, courts are now testing the limits of copyright protection. Most notably, the application of copyright to application programming interfaces (APIs) will be addressed by the U.S. Supreme Court in the *Google v. Oracle America* case on the 2020 docket.[10] A 2019 Supreme Court case requiring copyright registration as a prerequisite to litigation may reduce the filing of technology copyright claims in court and possibly arbitration.[11]

Nonetheless, as with patent claims, arbitration provides a reliable and efficient process for resolution of technology copyright disputes. Having

[9] *See Kamakazi Music Corp. v. Robbins Music Corp.,* 684 F.2d 228 (2d Cir. 1982).

[10] *Oracle Am., Inc. v. Google LLC*, 886 F.3d 1179, 1187 (Fed. Cir. 2018), cert. granted, No. 18-956, 2019 WL 6042317 (U.S. Nov. 15, 2019).

[11] *Fourth Estate Public Benefit Corp v. Wall-Street.com, LLC*, 586 U.S. ___, 139 S. Ct. 881 (2019).

fact determinations made by technology practitioners rather than by a jury offers increased predictability for resolving disputes.

D. Trademark Claims

Although trademark infringement claims are amenable to arbitration, the issues do not necessarily involve technology matters. One technology-related area well-adapted to arbitration is disputes under ICANN's Uniform Domain-Name Dispute Resolution Policy (UDRP), where disputes alleged to arise from improper registrations of domain names are resolved by means of expedited proceedings. As well, disputes brought pursuant to ICANN's Independent Review Process (IRP), administered by the AAA-ICDR, typically involve considerations regarding the technical and business workings of the internet.

E. Technology-Related Competition Claims

Where there are complex intellectual property claims, there are often parallel antitrust or competition claims. With the arbitration of competition claims firmly established in the U.S. and elsewhere, arbitration blending technology and competition law claims is increasingly prevalent.[12]

In the U.S., these claims are focused on private relief deriving from a contract relationship, including vertical and horizontal tying claims as well as monopolization claims between competitors. Here again, have cases decided by specialized decision-makers provides particular advantage in providing predictability in the process.

VI. Bringing Technology Arbitration to the Masses

The rise in technology arbitration is characterized by both a vertical broadening of the range of subject matter topics being submitted to arbitration as well as a horizontal expansion to smaller sized disputes. Technology arbitrations now arise in a wide array of consumer and business settings. This expansion reflects a growing acceptance of arbitration for efficient resolution of cases traditionally resolved in court as well as a growing sophistication

[12] *See Mitsubishi Motors Corp. v. Soler Chrysler-Plymouth, Inc.*, 473 U.S. 614 (1985)

of litigation counsel with respect to the benefits of resolution by arbitration for technology-related disputes.

A. The Shift to Online, Mobile, and Cloud Technologies

The *Apple v. Samsung* smartphone patent dispute during the previous decade and the *Oracle America v. Google*, Android/Java dispute today evidence a significant industry shift from technology disputes focused on computer hardware and semiconductors to those addressing mobile devices and the internet. The development of Software as a Service (SaaS) subscription models, expansion of company infrastructure beyond local networks and growing reliance on the cloud create many opportunities for new varieties of technology disputes.

Historically, large companies engaged in cross-border projects have relied on international arbitration. This reflects a sophisticated appreciation for the need for fair and neutral dispute resolution process that avoids the risk of foreign court bias. Arbitration also allows for expert decision-making and privacy. The Apple and Oracle cases are exceptions to the rule because one or both parties in those cases saw a benefit in having the issues aired publicly. Most technology companies, particularly non-U.S. companies doing business in the U.S., do not want their disputes tried in U.S. courts. Accordingly, most companies engaged in cross-border transactions, including technology manufacturing companies, particularly in the semiconductor market, and others handling major supply contracts, routinely turn to international arbitration.

A decade ago, technology arbitration was not widely adopted by domestic companies and was largely limited to sales and licensing disputes. Most smaller technology companies relied on the local courts, or avoided court disputes altogether to avoid litigation costs, and were not sensitive to cross-border dispute resolution risks.

The expansion of the internet into mobile communications, virtualization, and cloud computing has generated many new subjects for arbitration disputes. It has also heightened awareness on several of the many problems with technology dispute resolution in the courts. The time, cost, and un-

predictability of litigation has made arbitration a more favored forum for resolving many of the new disputes that arise.

B. Extending Technology to New Sectors: Biotech, Transportation, Manufacturing, Home Appliances, and the Internet of Things

Within a decade, technology itself has moved from the narrow realm of computing and related disciplines to cover a vast array of industries, products, and services. The biotech industry has long relied on technology for advances in pharma and medicine. The pace has quickened in the past decade, largely based on advances in understanding and manipulating DNA, and disputes relating to biotech industry contracts and performance are ripe for resolution by arbitration. The medical device sector is following a similar path with respect to its commercial ventures.

But technology has gone much further, affecting nearly every industry, from manufacturing to an array of service industries. Today, we rely on apps to hail rides in cars. We will soon be transported by driverless vehicles. And, more basically, many components of our cars rely on computer devices to function.

In the home security sector, our homes are watched by internet video technology. Devices control our thermostats and feed our pets. We exercise using electronics strapped to our wrists while we pedal our Pelotons to programming personally generated for us over the internet. Modern refrigerators and washing machines are connected to the internet. We order products online and receive them the next day thanks to technology innovations in supply chains and distribution.

In many manufacturing industries, humans have already been replaced by robots. We are also tracked online and, through sophisticated algorithms, presented with advertising, news, and other information matching our interests, providing us information, and swaying our opinions. And of course we cannot forget our internet voice assistants, Alexa, Google Assistant, and Siri, who serve us while silently listening to all we say.

The Internet of Things (IOT) resides in our cars, in our homes, and on the streets and engages in surveillance wherever we may be. For as

much good as these technologies bring, they raise new challenges threatening injuries from product defects, health disasters, car and plane crashes, cybersecurity breaches, and privacy violations. As technology expands to new industries and finds new uses, there is a growing likelihood many such disputes will find their way into arbitration.

C. Arbitration for Smarter Parties and Smaller Disputes

Arbitration has become accepted and relied on by a growing number of industry sectors, which are using the process in contexts where it would not have been used before. Today, many middle market companies, as well as small cap and privately held emerging growth companies, include arbitration provisions in their business agreements. This development is largely attributable to corporate counsel who seek the fair forum, decision-maker expertise, efficiency, and privacy that arbitration offers. The resolution of cross-border commercial disputes involving technology companies and technology subject matters are also on the rise.

Although many technology litigators in the U.S. still prefer the familiarity of the courts, a growing number are responding to client demands for reliance on arbitration for speed and cost-savings. Technology arbitration has proven to satisfy these needs, particularly where counsel engaged on the matter by both sides are clearly instructed on the need for efficiency.

D. Non-Technology Industries with Technology Disputes

The growth in use of technology among the consumer demographic is comparable to its proliferation in industries outside the high technology sphere. Many traditional and low-tech industries including construction, energy, healthcare, finance, automotive, industrial manufacturing, and defense, among others, now base core activities around computing and other technology innovations. In this way, technology arbitration is increasingly important not just to the technology sector but to nearly every major business sector. Thus, the indicative growth in the volume of the AAA-ICDR's cases comes not only from disputes between technology companies but also from the significant use of technology, and the resulting increase in the

number of disputes about technology, in essentially all other industries not previously associated with or integrated with technology.

VII. New Technologies and New Claims in the Internet Age and Beyond

A. The Globalization of Technology Disputes

Growing global reliance on Internet technologies has changed the subject matter of technology arbitration. In an industry where the crown jewel, data, moves instantly and effortlessly around the world, there is a significant need for international protections. Those protections are largely unavailable through national courts because their jurisdiction is limited. Arbitration of cross-border technology disputes is flourishing in a world where companies develop code in India, manufacture product in China, and provide services and support to consumers worldwide. Arbitration has been and is increasingly a solution because, based on its international treaty convention framework, it operates on a global basis.

The expansion of the internet into mobile communications and cloud data has generated many new areas for arbitration disputes, ranging from offshore development, to subscription distribution, to mobile apps, to cloud storage, to cloud platforms—to name just a few. Each new advance in technology, as well as in technology development and distribution, creates greater demand for sophisticated decision-making. These disputes are being addressed in domestic arbitrations where parties have the benefit of expert decision-makers and flexible resolution processes and in international arbitrations to avoid local court systems and benefit from international enforcement procedures.

B. Data Privacy and Cybersecurity

In addition to arbitrations involving internet technologies, there is a growing focus on the data privacy and cybersecurity in international arbitration. Data privacy and cybersecurity are two very different things; data privacy is focused on protection of privacy rights and has limited technical application, whereas cybersecurity principally addresses the technical protection of data in a computer or computer network.

1. Data Privacy: The GDPR and Other Legislation

The advent of the EU General Data Protection Regulation (GDPR), which regulates data protection and privacy in the European Union and the European Economic Area and also addresses the transfer of personal data outside the EU and EEA areas, has required companies around the world to develop data privacy compliance programs.

Although U.S. companies collecting data from EU users had to develop compliance programs to satisfy GDPR requirements, the import of data privacy protections in the U.S. has been substantially ramped up by the California Consumer Privacy Act (CCPA), which became effective in 2020. The CCPA has a broader definition of private data than the GDPR and provides for private enforcement mechanisms. The CCPA applies to nearly every company collecting personal data on California residents, meaning most major U.S. companies will need to comply.

This is an area with the potential for arbitration resolution of disputes. The AAA-ICDR was a provider for Safe Harbor disputes under prior EU law and is developing new initiatives focused on data privacy claims under GDPR and state initiatives.

2. Cybersecurity and Data Breaches

Data breaches occur on a daily basis and have affected nearly everyone in the developed world. As a result, cybersecurity and related data breach claims have risen steeply over the course of the past decade. Putting aside consumer claims, many of the contract disputes resulting in cybersecurity claims are being resolved in arbitration. These claims fall into two broad categories: (A) claims involving cybersecurity service providers and (B) claims involving insurance providers. In both these areas, businesses are relying on arbitration to provide efficient and private dispute resolution, often in parallel with threats of class action lawsuits and government regulatory investigation actions.

Arbitrator expertise in networking and cybersecurity provide significant efficiencies and assurances to the parties. As detailed below, the AAA-ICDR has devoted significant attention to resources, guides, training, and infras-

tructure to ensure confidentiality, privacy, and cybersecurity protections for its users.

C. New Technologies from Blockchain to Neural Networks to Artificial Intelligence and Everything in Between

New technologies dazzle the human spirit. In the past decade, many new technological innovations have come to the forefront. Most of that innovation is poorly understood and, in some cases, is feared or has been criticized. Many of the innovations that we are seeing today—and anticipating in the future—rely on arbitration mechanisms or will have fundamental and possibly disruptive impact on the way arbitration is conducted.

1. Blockchain and Smart Contracts

Blockchain has captured headlines in the past decade as Bitcoin and a nearly endless array of cryptocurrencies have been privately and publicly traded with wild fluctuations in value, making millionaires of some and bankrupting others within seconds. Cryptocurrency trading has generated a significant number of litigations and arbitrations around the world, with some platforms relying on internal dispute resolution mechanisms and others turning to leading international providers.

Despite the attention focused on cryptocurrencies, the potential of blockchain is much broader and more enduring. Blockchain is essentially an online data structure that holds blocks of transactional records. It operates in a widely decentralized manner to provide both transparency and security.

Blockchain has many potential applications beyond the trading and use of cryptocurrencies to pay for financial transactions. One of the most widely explored is the development of "smart contracts" essentially online software contracts that automatically facilitate, verify, or enforce the performance of the transaction. These contracts operate without third party intervention. Many established companies in a variety of industries are developing smart contract and other blockchain based products.

Some of these products have rudimentary internal dispute resolution mechanisms. Others rely on traditional providers. The interplay between smart contracts and arbitration is still under development but the tech-savvy, expedient dispute resolution offered by arbitration is a good toolset for smart contracts that go wrong.

2. Biotech—Artificial Implants and DNA Engineering

As addressed above, the biotech sector already relies on arbitration to resolve complex commercial and technology disputes. Advances are regularly made with respect to artificial implants, particularly sensory and neurological implants. Longer term advances are being made using DNA for technological advances in genetic engineering, DNA profiling, bioinformatics, enzymes, nanotechnology, and information storage. These advances bring together researchers and developers from around the world and require complex technologies and arrangements. The complexity, cost, and need for confidentiality associated with many of these projects make them well suited for dispute resolution through arbitration.

3. Artificial Intelligence and Quantum Computing

The possibilities of artificial intelligence (AI) are nearly limitless and unimaginable. AI refers to the simulation of human intelligence in machines. These intelligent agents perceive their environment and take actions that maximize the chance to successfully achieve programmed goals. AI has the potential to outthink humans and make impacts beyond our comprehension.

The cognitive capabilities of current AI architectures are rudimentary. Advances in computing power and Big Data in the past decade have revived the potential for AI. AI is already in use for autonomous vehicles, Internet search engines, online advertising, online assistants, and predictive analysis. It has wide potential applications in finance, healthcare, security, and military applications.

AI presents a number of fundamental questions, the first being whether it will be capable to handle complex tasks that humans can handle. Whether AI can replace lawyers and arbitrators remains to be seen. Already in online

arbitration forums the argument has been made that there isn't sufficient data for the robots to replace humans in law and arbitration. Only time will tell. A second question is whether AI is potentially dangerous because it may not be able to process human ethics and could have unintended consequences. Many leading technologists, most notably the late Physicist Stephen Hawking, warned that AI could evolve to the point that humans could not control it.

For now, AI will continue to advance, and its long-term impact will remain uncertain. We can expect to see new court cases and arbitrations involving AI as it is applied to a variety of uses in the years ahead.

The impact of AI may take a dramatic leap when quantum computing comes of age. Quantum computing is the use of quantum-mechanical phenomena, that is harnessing atomic and subatomic particles, to perform computation. Quantum computers are expected to process calculations more than 3,000,000 times as fast as the world's fastest computers today. In 2019, Google AI Quantum claimed it achieved "quantum supremacy"—that is, using quantum computing to achieve a result current computers cannot.

The potential of quantum computing will become better understood in the decades ahead. For now, it is too early in development to have critical impacts.

VIII. Technology in Arbitration

A. ODR and Dispute Resolution Tools

In the past decade, technology has become more widely used in arbitration as well as being the subject of arbitration. The arbitration sector has tracked litigation practice in relying on email, cloud storage, online conferencing, and document management tools to improve efficiency. To date, none of the innovations come near to being disruptive technology that will change industry fundamentals.

In 2019, the IBA Arb40 Subcommittee released an online guide to Technology Resources for Arbitration Practitioners that compiles a list of currently available technological advances that can be used to augment or assist an arbitration. The list includes conferencing, document management, data

transfer, presentation tools, virtual reality tools, analytics, translation, and cybersecurity and data privacy resources.

One area that has been given focused attention in the past decade is online dispute resolution (ODR), complete platforms for negotiating, mediating, and arbitrating disputes. ODR developed as a means to resolve small e-commerce retail disputes and, although its use is growing substantially each year, it has yet to make any meaningful impact on complex commercial and technology disputes.

As detailed below, the AAA has devoted substantial resources to build an ODR solution and other platforms to support dispute resolution.

Finally, the promise of robotic arbitrators is on the way and has caused consternation for some, denial by others, and intrigue for all. As discussed above, undoubtedly, artificial intelligence will change the way we live and work. It is far too early to speculate when and how it will have any significant impact on the arbitration process.

B. The AAA's Online Platform

The AAA-ICDR has invested millions of dollars to develop a state of the art, technologically based Alternative Dispute Resolution platform for all users. This platform has to be current and easy to use for all case participants, but also has to have the ability to be updated and improved as technology systems and practices change. This platform has to have security among and between the different users in each case and also must protect from any malicious attack from the outside world.

The AAA-ICDR's administrative platform offers Windows-based software to manage each and every case from start to finish. This system includes built-in timeframes, appointment methodologies, case financials, communication systems, and other features that conform to the many rule sets offered by the AAA-ICDR.

Parties file cases and manage them with password-secured assess to the administrative portal called AAA WebFile. On this site they can review case documents, upload new case documents, complete arbitrator lists, review finances, and accomplish a variety of other case-specific tasks. This is also

a tool where an attorney with more than one case can quickly get updates on the status of multiple cases.

The AAA-ICDR has also established a connected but separate platform for its arbitrators and mediators to manage their profile, rates, finances, and connection to cases where they are appointed.

C. Innovative Rules and Procedures—Case Management Efficiency

Arbitral institutions have innovated with new rules and procedures to allow better handling of technology-related disputes. The AAA-ICDR has been one of the leaders in this initiative. In addition to establishing a panel focused specially on technology disputes, the AAA-ICDR has developed rules and procedures for injunctive relief, emergency arbitrators, and expedited proceedings so that parties in disputes, including technology-related disputes, can receive immediate and expedited relief.[13] The AAA-ICDR provides for mediation as an opt-out default process in its commercial arbitrations.[14]

The AAA-ICDR has also innovated "À La Carte Services" to reduce costs, such as case financial administration services for non-administered arbitrations, arbitrator list and appointment services, challenge review procedures for non-administered arbitrations, and optional appellate arbitration rules.[15]

In its training and guides, the AAA-ICDR emphasizes adoption of efficient case management practices whenever possible, including putting reasonable limits on discovery, early resolution of issues and efficient dispositive motion practice in commercial cases, document-only hearings, and other procedures to limit costs and meet user requirements.

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[13] American Arbitration Association, Commercial Arbitration Rules and Mediation Procedures (2013).

[14] *Id.*

[15] American Arbitration Association, À La Carte Services, https://www.adr.org/ALaCarteServices.

All of these initiatives improve the suitability of arbitration for resolution of tech-related disputes by ensuring that disputes can be resolved speedily, effectively, and securely.

D. Confidentiality, Privacy, and Data Security

Confidentiality, privacy, and data security are often critical considerations in technology cases.

The AAA-ICDR has a long history of protecting the privacy of proceedings and the confidentiality of user data in all of its arbitrations. AAA-ICDR staff undergo extensive training on privacy and confidentiality protocols.[16] The AAA-ICDR has invested significantly in hardware and software resources to properly secure data.[17] Further, AAA-ICDR panelists are required to undergo privacy and confidentiality ethics and rules training, as well as specially developed cybersecurity training as part of their core obligations.

Where appropriate, AAA-ICDR neutrals can issue protective orders to provide for increased levels of protection of proprietary information in cases.

In 2017, the ABA Standing Committee on Ethics and Professional Responsibility issued guidance to help attorneys address their obligations to safeguard their clients' sensitive information. In 2019, ICCA and several U.S. working groups released a Cybersecurity Protocol for International Arbitration. The AAA-ICDR has implemented best practices, policies, technologies, and procedures to help protect case data stored and managed on AAA's technology infrastructure. This year, the AAA and ICDR integrated a commitment to cybersecurity within their Notice of Appointment. A newly created AAA-ICDR Best Practices Guide for Maintaining Cybersecurity and Privacy and a Cybersecurity Checklist for parties and tribunals invite related discussions in the early stages of the preliminary hearing.[18]

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[16] American Arbitration Association, Secure Case Administration, https://www.icdr.org/Secure_Case_Administration.

[17] American Arbitration Association, Cybersecurity and Data Protection, https://www.adr.org/TechnologyServices/cybersecurity-and-data-protection.

[18] American Arbitration Association, AAA-ICDR® Best Practices Guide for Maintaining Cybersecurity and Privacy, https://www.adr.org/sites/default/files/document_repository/AAA258_Best_Practices_Cybersecurity_Privacy.pdf.

The same emphasis was introduced into criteria for arbitrators being added to the panel.

E. COVID-19 and Remote Videoconferencing

The COVID-19 pandemic has caused major business disruptions throughout the U.S. and the world. The AAA-ICDR remains active and operational through business continuity planning including providing for backup servers and redundancies in IT and other capabilities. Filings are handled online and hearings are being conducted through remote technologies.

The pandemic has led to increased reliance on and adoption of videoconferencing and other digital technologies in many business sectors. The AAA-ICDR has been at the forefront in the ADR sector by providing a series of Virtual Hearing Guides and Orders and Procedures for videoconference hearings, including detailed guidance on the use of Zoom.[19] AAA-ICDR staff are trained on the use of Zoom and can assist with remote hearing arrangements.

IX. Conclusions

The rise of technology arbitration in the last decade comes as no surprise. It is a fitting answer to overburdened court systems incapable of satisfying the need for the smarter, faster, and more cost-efficient dispute resolution required in most technology-related disputes. Its rise in the international arena has been further bolstered by the ubiquity of the internet, the cross-border nature of many technology transactions, and the need to have a forum that is perceived as fair for all parties with remedies that provide multinational solutions and do not have the geographic limitations of court judgments.

In the course of a decade, technology arbitration has filled the void and beyond. Its reach extends far beyond licensing claims to reach core IP issues and address an array of new technologies. In many ways, arbitration is keeping pace with technological innovation, and its flexibility promises further

[19] American Arbitration Association, AAA-ICDR COVID-19 Resource Center, https://go.adr.org/covid19.html.

opportunities and uses ahead. As well, technology-related arbitration can now be found in nearly every business sector.

There are many technologies that have advanced dramatically in the past decade and many that will advance beyond our expectations. The long-term future of technology and, in turn, technology arbitration, remains unknown. But for now, arbitration has increasingly important role in resolving technology-related disputes in a fair, efficient, and effective manner.