

Measures to Realize Sustainable and Efficient Justice from the Perspective of Information and Communications Technology Focusing on the Korean Court*

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Abstract

The United Nations 2030 Agenda for Sustainable Development with 17 goals calls for a renewed global partnership to foster transformative changes applicable to all countries. Goal 16, the provision of justice for all, can be the key linkage with law and jurisprudence. The Korean Courts share the idea of justice for all with the United Nations. The Korean Judiciary paid continuous efforts by means of Information and Communications Technology (ICT) which could be evaluated as an implementation of the Goal 16 as well as a proposal of "some ideas and measures to realize a sustainable and efficient justice" for the future Judiciary.

The judicial informatization of Korea was introduced into the court system from the late 1970s onwards. The Korean Judiciary also implemented the Electronic Litigation system (E-Litigation) in 2010. The e-litigation systems are evaluated as the most transformative method for cultivating efficient and sustainable justice, both for judges and the public. Despite these favorable ICT circumstances, we were also confronted with many obstacles such as financial burdens, technology and security as well as the digital divide. The Supreme Court of Korea has begun a new project, the next generation of judicial ICT systems, to cope with these obstacles. This article addresses some proposals for measures to realize sustainable and efficient justice for the judicial informatization of the Korean Courts at its preliminary stage.

The first step will be the Business Process Reengineering and Information Strategy Planning (BPR & ISP) to reduce the gap between the court system and the people's expectations. Access to legal information, both online and offline, can become a strong and transformative enabler for the achievement of sustainable and efficient justice. Legal empowerment through free access to law and court cases can help fight discrimination and safeguard the rights of all people. Court information must be much more accessible to public to

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guarantee the sustainability of the court system and the faith of the judiciary. The artificial intelligence device could be used in the legal realm as an Alpha-Judge to increase efficiency. However, the artificial intelligence cannot serve as a substitute for the human mind or feelings of justice. The ubiquitous access will benefit the welfare of court workers. We also have to bear in mind that the importance of security and data protection. ICT has to bridge these two concepts: security and safety. Lastly, although a treasure trove of information is available to us, access to information is not always guaranteed to everybody. It is the judiciary's role and responsibility to embrace those who have been alienated from society.

ICT will become more prevalent by soliciting fancy and efficient methods. Technology is an effective tool to facilitate our advancement, but its use cannot be the final goal we are striving for. We must focus on the core values and purposes of the judicial service. The justice system is human. I am sure we can continuously seek future advancements, while reminding ourselves that the best way to predict the future is to create it.

KEY WORDS: sustainable development, judicial informatization, e-litigation, E-court, next generation, access to justice, artificial intelligence

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Background

The title of this article stems from the United Nations “2030 Agenda for Sustainable Development: Transforming our World,”¹⁾ which was officially launched on the 25th of September, 2015 at the 70th session of the United Nations General Assembly. The 17 goals with 169 targets covering a broad range of sustainable development issues were proposed for global peace and security, development, and human rights. The agenda originates from the Millennium Development Goals (MDGs)²⁾ established in 2000. Led by the former Secretary-General of the United Nations, Kofi Anan, the UN

1) General Assembly Resolution (G.A. Res.) 70/1, at 1, U.N. Doc. A/RES/70/1 (Sept. 25, 2015). The title of this resolution is “Transforming our World: The 2030 Agenda for Sustainable Development” adopted by the General Assembly at its 70th session under Agenda items 15 and 116. This Agenda is a plan of action for people, the planet and prosperity. It also seeks to strengthen universal peace and freedom.

2) G.A. Res. 55/2, U.N. Doc. A/RES/55/2 (Sept. 18, 2000). Resolution adopted by the General Assembly at its 55th session under Agenda item 60 (b) as the United Nations Millennium Declaration.

launched the MDGs, which would be pursued from 2000 to 2015.³⁾ Considerable progress has been made since 2000 towards the achievement of the eight MDGs, which were successfully concluded in December 2015.⁴⁾ Before their target date, the UN, coordinated by Secretary-General Ban Ki-moon, took the lead on establishing the next generation of goals, entitled the Post-2015 Development Agenda, in 2014.⁵⁾ An Open Working Group was created for the development of a set of next generation goals from 2016 to 2030. After a long intergovernmental negotiation process, 17 goals⁶⁾ for

3) U.N. Secretary-General, *Road Map Towards the Implementation of the United Nations Millennium Declaration*, at 7. U.N. Doc. A/56/326 (Sept. 6, 2001). The report of the Secretary-General to the General Assembly was released as the *Road Map Towards the Implementation of the United Nations Millennium Declaration* at its 56th session under Item 40 of the provisional agenda- Follow-up to the outcome of the Millennium Summit. The United Nations Millennium Declaration *General Assembly resolution 55/2*, which was adopted by all 189 Member States of the United Nations (147 of them represented directly by their head of state or government) on 8 September 2000, embodies several specific commitments aimed at improving the lot of humanity in the new century.

4) UNITED NATIONS, *THE MILLENNIUM DEVELOPMENT GOALS REPORT 2005* 6-36 (New York, 2005). The eight Goals are as follows: Goal 1 Eradicate extreme poverty & hunger; Goal 2 Achieve universal primary education; Goal 3 Promote gender equality & empower women; Goal 4 Reduce child mortality; Goal 5 Improve maternal health; Goal 6 Combat HIV/AIDS, malaria & other diseases; Goal 7 Ensure environmental sustainability; Goal 8 Develop a global partnership for development. For detailed progress reports, *see also* UNITED NATIONS, *THE MILLENNIUM DEVELOPMENT GOALS REPORT 2015* (New York, 2015).

5) Prior to the launching of the Post-2015 Agenda, the United Nations Conference on Sustainable Development - or Rio+20 - took place in Rio de Janeiro, Brazil on the 20th to the 22nd of June, 2012 and resulted in a focused political outcome document which contains clear and practical measures for implementing sustainable development. In Rio, Member States decided to launch a process to develop a set of Sustainable Development Goals (SDGs), which will build upon the Millennium Development Goals and converge with the post 2015 development agenda. The outcome document was issued as *UNGA A/RES/66/288*, on the 11th of September, 2012 at its 66th session under Agenda item 19. The resolution was adopted by the General Assembly on the 27th of July, 2012.

6) The Open Working Group proposal for Sustainable Development Goals. The General Assembly on Sustainable Development Goals was issued as document *UNGA A/68/970* on the 12th of August, 2014, available at <http://undocs.org/A/68/970>. Goals are as follows: GOAL 1 End poverty in all its forms everywhere; GOAL 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture; GOAL 3 Ensure healthy lives and promote well-being for all at all ages; GOAL 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; GOAL 5 Achieve gender equality and empower all women and girls; GOAL 6 Ensure availability and sustainable management of water and sanitation for all; GOAL 7 Ensure access to affordable, reliable,

the next 15 years were made. First called the Post-2015 Development Agenda and now succeeded by the new 2030 Agenda for Sustainable Development, also known as Sustainable Development Goals (SDGs).⁷⁾

Whereas the MDGs could be understood as a commitment to tackle extreme poverty in developing countries,⁸⁾ the governments agreed that the new agenda should be universal and address challenges common to countries and regions worldwide. The UN 2030 Agenda for Sustainable Development calls for a renewed global partnership to foster transformative changes applicable to all countries. This includes poverty eradication, tackling inequality, women and girls' empowerment, and managing environmental challenges. The current agreement presents a delicate political compromise that allows for the integration of issues of inclusive societies, access to justice, and effective, accountable and inclusive institutions into the development agenda. This effort refers to Goal 16, which reads, "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels."

Even though all of the MDGs and the 2030 Agenda for Sustainable Development are not familiar with the academia and the courts, Goal 16,

sustainable and modern energy for all; GOAL 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; GOAL 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation; GOAL 10 Reduce inequality within and among countries; GOAL 11 Make cities and human settlements inclusive, safe, resilient and sustainable; GOAL 12 Ensure sustainable consumption and production patterns; GOAL 13 Take urgent action to combat climate change and its impacts; GOAL 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development; GOAL 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss; GOAL 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels; GOAL 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development.

7) See also Millennium Development Goal Indicators Database at <http://millenniumindicators.un.org/>. Related papers and background documents were presented at the Statistical Commission of the UNDP, 7-10 March 2006 (E/CN.3/2006/14, E/CN.3/2006/15).

8) Reflecting on the MDGs and looking ahead to the next fifteen years, there is no question that we can deliver on our shared responsibility to put an end to poverty, leave no one behind and create a world of dignity for all. *Supra* note 4, at 3.

specifically the provision of justice for all, can be the key linkage with law and jurisprudence as we are all targeting the true value of sustainable and universal justice.

Judicial Informatization

Goal 16's link to law and jurisprudence is represented by the statement, "[to] promote peaceful and inclusive societies for sustainable development and improvement, provide access to justice for all and build effective, accountable and inclusive institutions at all levels including court." I believe the Korean Courts share the idea of justice for all with the United Nations which is described in the Goal 16 of the 2030 Agenda. This article is an interpretation of the continuous efforts of the Korean Judiciary by means of Information and Communications Technology (ICT) which could be evaluated as an implementation of the section of Goal 16 as well as a proposal of "some ideas and measures to realize a sustainable and efficient justice" for the future Judiciary when it further introduce ICT to its courts.⁹⁾ To establish a fundament for this approach, I first provide a summary of the historic achievements of the Judicial Informatization of the Court of Korea. I also introduce the status of the next generation judicial transforming project, which is still evolving with active feedback from end users and policy makers of the Court. However, some of this information is confidential and yet to be released. Thus, I can only roughly discuss the history and the future directions of the Judicial Informatization of the Korean Court to realize sustainable and efficient justice from the perspective of ICT.

Information and Communications Technology (IT or ICT) cannot be

9) The importance of ICT was recognized at the "Addis Ababa Conference" by heads of state and government and high representatives, who met from the 13th to the 16th of July, 2015. The creation, development, and diffusion of new innovations and technologies and associated know-how, including the transfer of technology on mutually agreed terms, are powerful drivers of economic growth and sustainable development. *Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda)* was proposed to the United Nations General Assembly at its 69th session under Agenda item 18. See G.A. Res. 69/313, U.N. Doc. A/RES/69/313 (Aug. 17, 2015).

underestimated in its capacity for developing future laws and judiciaries. In the past, judicial systems have been slow to embrace changes. At the same time, the judicial practices and procedures have been deemed to be expensive, difficult, and time-consuming. Nevertheless, the objective of every judicial system is to serve justice and enhance the welfare of all in an efficient manner. However, to attain efficiency, courts must expedite the entire judicial process, which can be quite difficult. To address this challenge, informatization such as the case search program, the court docket management tools, judgment writing program were introduced into the court system from the late 1970s onwards, which allowed for the concurrent achievement of cost-effectiveness and serving justice.¹⁰⁾ Given these successes, the Korean Judiciary continued to pursue the informatization of court systems and is thinking about enhancing the level of incorporation of IT systems in judicial work process to realize sustainable and efficient justice.¹¹⁾

In addition to Korea, many other countries in the world such as Singapore and the United States have incorporated top-notch technology in their legal and/or judicial systems. These countries employ similar interfaces and software programs to support judges, court officials, lawyers, law practitioners, academics and the public such as WestLaw and the LexisNexis search engines, the Thomson Reuter case search system, CM-ECF (Case Management and Electronic Case Filing system in the US Federal Courts),¹²⁾ and the E-Court (Electronic Court System in Korea).¹³⁾ Each of these IT-based judicial systems is intended to achieve efficiency, transparency, and sustainability in the deliverance of justice. Some programs are developed by private vendors and others by public sectors. For example, the Singapore Mediation Center (SMC) comprises one such program, which is entirely based on Information Technology skills from

10) NATIONAL COURT ADMINISTRATION OF KOREA, THE SUPREME COURT OF KOREA 66-71 (2012).

11) NATIONAL INFORMATION SOCIETY AGENCY OF KOREA, 2013 NATIONAL INFORMATION WHITE PAPER 119-128 (2013).

12) For detailed electronic case filing systems in the U.S. and Singapore, *See* NATIONAL COURT ADMINISTRATION OF KOREA, RESEARCH ON THE ELECTRONIC LITIGATION SYSTEMS IN THE U.S. AND SINGAPORE (2010).

13) For detailed efficient and integrated case management system of the United States District Court of the District of Columbia, *see Id.*, at 93.

filing to settlement. All these systems bear the same essential aim of ensuring justice for all through efficiently and sustainability by using supporting tools in the form of ICT technologies.

Experiences of Electronic Litigation Systems

In addition to researching the electronic-based judicial management systems used in the United States and Singapore, I have personally engaged in launching electronic litigation systems in Korea from 2009 to 2014.¹⁴⁾ I am currently using the very electronic litigation system, “E-Court” in the Daegu District Court that I had participated in developing in its early stages. Before implementation of the electronic system, many judges and court officials expressed the desire to retain paper-based practices. After five years of using the new system, several court personnel complimented the electronic tools for their efficiency and expressed appreciation for relieving the burden of trivial paper handling. Despite these advantages, reading electronic cases with over 1,000 or 2,000 pages via a screen or a tablet can be quite difficult. Some judges complained that reading off a screen hurt their heads or that the useful paragraphs in the electronic documents are not easy to be memorized and instantly disappear from their memory.

Evidently, this system has its benefits and drawbacks. However, I believe that electronic litigation systems are the most transformative method for cultivating efficient and sustainable justice, both for judges and the public, once its useful features are highlighted and it is customized for every user. In this context, access to legal information through modern technology is a key component of a truly transformative judicial measure. The most important feature of this judicial informatization is that it is “human.” The history of the judicial informatization of the Korean Judiciary illustrates this notion.

14) The study and research paper on the Electronic Litigation Systems in the U.S. and Singapore was performed by a special taskforce team, in which I was a member of, organized by the Supreme Court of Korea from December 2009 to January 2010. *Ibid.*, at 1-2.

Overview of the Korean Judiciary

The use of Information Communications Technology in the Korean Court dates to the 1970s.¹⁵⁾ The push toward informatization in the judiciary encompassed four basic goals. First, to improve the efficiency of court processes; second, to attain better court proceedings; third, to provide greater access to the judiciary; and fourth, to minimize and eliminate unnecessary costs by improving transparency. Through achieving these goals, the Korean Judiciary strives to attain the public's trust and confidence in the judicial system. In 1979, the Korean Judiciary took its first steps to establish an electronic trial support system by requesting the Korea Institute of Science and Technology (KIST) to conduct a study on the feasibility of electronic judicial proceedings. After the study, the Judiciary started to place budgets on the ICT sector to create a better solution in handling the trial process. In 1986, the Korean Judiciary developed the first Case Management System (CMS) for civil cases. In 1992, under a five-year plan, Client/Server structured a second Case Management System with advanced information technology ("IT") that replaced the previous CMS systems. And from 1992 to 1999, the Judiciary upgraded and replaced the CMS systems with a web-based structure model for all cases. After building up this unified and integrated second-generation Case Management System, judges and court clerks could easily handle all judicial business process using internet-based systems.¹⁶⁾

Additionally, the Korean Judiciary introduced and implemented the state-of-the-art Electronic Litigation system and new judicial business management model in 2010 and replaced the previous paper-based judicial system with an electronic-based model.¹⁷⁾ We call this "E-Litigation" or "E-Court." This differs from the previous CMS or C/S model in terms of

15) THE WORLD BANK, DOING BUSINESS 2014: UNDERSTANDING REGULATIONS FOR SMALL AND MEDIUM-SIZE ENTERPRISES, COMPARING BUSINESS REGULATIONS FOR DOMESTIC FIRMS IN 189 ECONOMICS 66 (2013).

16) *Supra* note 10, at 66-71.

17) The system enables some judges to adjudicate up to 3,000 cases a year, manage up to 400 a month and hear up to 100 pleas a month. THE WORLD BANK, DOING BUSINESS 2016: MEASURING REGULATORY QUALITY AND EFFICIENCY 96 (2015).

electronic skills. Recognizing the validity of electronic signature and electronic documents by the amendment of the Korean Civil Procedural code as of December 2009, the E-Litigation system also changed the basic concept of the court's work process. In the past, a party was required to visit a court in person or send a paper via mail to file a complaint. However, after launching the E-Litigation system, parties may now file all civil litigation documents such as complaints, answers, and briefs through the Internet. Also, documents written by the opponent or the court may be served electronically, and the court immediately notifies the involved parties of such service of process with an email or a text message.

As the court manages case processing electronically and handles litigation records in the form of electronic rather than paper documents, the court and the involved parties may view electronic records to prepare a trial. The actual trial proceedings are conducted in a court room equipped with electronic facilities. The electronic activities and their output have shown to be as valid and effective as paper-based methods. Current E-Court systems have 18,000 internal users, including 3,000 judges from the Supreme Court, 6 High Courts (including Patent court), 18 District Courts, 40 District Branch Courts, and 100 Municipal courts from all over the country with centralized and secured internal networks.¹⁸⁾ Over 120,000 external users also access our public judicial information systems, including the official Supreme Court web page, legal information system, case information search system, Internet registry system, and an e-filing system.

To provide more specifics for the e-filing of a case, an e-filing system allows litigants of a case to submit complaints and other documents to the courts electronically.¹⁹⁾ Service of process is then conducted using electronic means, allowing the courts to promptly set the first date of court appearance. These electronic processes, in turn, have helped expedite court trials and related procedures. Prior to the widespread implementation of an electronic filing system for civil cases, the Patent Court was the first to utilize the system. Patent Court statistics show that, on average, it takes 130

18) NATIONAL COURT ADMINISTRATION OF KOREA, ANNUAL REPORT OF THE COURT OF KOREA 24 (2015).

19) For the current rules and regulations of the e-filing systems in Korea, see Byung-Hyun Yoo, *Rules and regulations on E-filing*, 62 KOREAN LAW REVIEW, Sept. 2011 at 193, 199-205.

days from the date of filing of a complaint to the first court appearance. After installing the electronic filing system, this was reduced to 78 days on average. Most importantly of all, the system allows litigants to access trial dates, case records, and all other trial-related information online. This enables the litigants to check updates, view records, and offer instant opinions in real-time.

In addition to expediting legal proceedings, we are hopeful that the transparency that electronic systems provide in the trial process will remove all groundless claims involving court proceedings. Judicial informatization such as real time internet based electronic case search system, electronic case filing system, and electronic case management system affects both the courts and the public. Indeed, many advantages were produced by converging the electronic records and electronic courts, thereby permitting in-depth and multi-dimensional court proceedings. In this sense, the technologies in the courtroom proved useful for delivering a court hearing that was not only more practical, but also more focused.

Achievements and Success

Evidently, Korea has achieved a sophisticated level of judicial informatization, which has yielded several benefits.²⁰⁾ The successful implementation and use of informatization in Korean courts can be attributed to several factors.²¹⁾ First, many of the staff and members of the judiciary volunteered to participate in the process. The second contributing factor was the fast and appropriate policy decision-making. The third

20) Korea ranked the first in the field of enforcing contracts with 14.5 of the index for quality of judicial processes by the World Bank. It is directly related to the the ability for dispute settlement. I think the judicial IT system has made huge contribution to such a result. THE WORLD BANK, DOING BUSINESS 2017: MEASURING REGULATORY QUALITY AND EFFICIENCY 217 (2016).

21) These four factors were officially mentioned by Honorable Chief Justice of Korea, Lee, Yong-hoon in his speech, *The Judiciary in the Information Age: The Present State and the Future Direction*, at the 14th Conference of Chief Justices of Asia and the Pacific, held on the 13th of June, 2011. For a brief of the conference, see YONHAP NEWS (June 13, 2011), at <http://www.yonhapnews.co.kr/society/2011/06/13/0701000000AKR20110613118600004.HTML>.

contributing factor is our focus on designing a user-friendly infrastructure.²²⁾ The fourth factor that enabled successful computerization of our court system was the adequate and ample infrastructure already equipped from the 1970's. Despite these favorable circumstances, we were also confronted with many obstacles. One of the initial and constraining issues we faced was financial. Some challenges also surrounded issues with technology. Our third challenge involved security measures, especially protecting sensitive personal information. Lastly, there is a "digital divide issue"²³⁾ inherent in the emergence of informatization.

The Way forward: Next Generation

Based on the challenges we faced, I suggest some plans and ideas to transform our judiciary to realize sustainable and efficient justice using information and communications systems. Although the implementation of electronic systems resulted in considerable results, the Korean Court did face several challenges in the use of and issued complaints regarding our judicial IT systems. The court tried to continue to focus on the feedback from the backend users and frontend users, including many visitors from around the world. There were many judges, lawyers, and high-level officials, including Supreme Court justices, visiting the Supreme Court IT Center to benchmark our leading judicial IT skills and facilities. For the visitors, we constructed a special exhibition hall at the Supreme Court IT Center in 2011, allowing such visitors to experience virtual electronic litigation systems such as filing, reviewing, processing, and rendering judgment systems in an electronic courtroom. However, some of the visitors reported that the technology is already so widespread in business sectors that the system provides nothing new. Most top-class business companies have already adapted this kind of technology. It is not difficult

22) For a detailed history of programs and systems, *see supra* note 11, at 121-123.

23) A digital divide is an economic and social inequality with regard to access to, use of, or impact of ICT. The internet and related technologies have reached developing countries much faster than previous technological innovations. However, the internet remains unavailable, inaccessible, and unaffordable to a majority of the world's population. THE WORLD BANK, WORLD DEVELOPMENT REPORT 2016: DIGITAL DIVIDENDS 5-8 (2015).

for other countries or judiciaries to absorb trendy technology once they have the financial means. This begs the question to the Korean Judiciary: What is the actual effect and novelty that the informatized judiciary brings? What are the valuable benefits that informatized legal systems provide? Are we satisfied with the fact that we were the front runner of the informatization of the judicial work process systems? Fundamentally, do we listen to the voices of judges and other personnel who are not familiar with IT skills and who resist becoming accustomed to the output of IT guys who do not understand the judicial system?

Yes. Thus, the Supreme Court initiated an effort for reengineering the current informatized judicial system. The Supreme Court of Korea has begun a new project to rebuild the structure of our judicial IT system, which has been called the “next generation of judicial IT systems.” To conduct this process, a Task Force Team, “Long Term Project for Judicial Informatization,” headed by a high-level judge was created.²⁴⁾ The team reviewed all the current processes of court business and explored up-to-date IT skills from the private sectors who have achieved efficiency and sustainability in 2015. More than 60 judges and court officials, from their 30s to their 50s, participated in the year-long project and proposed diverse views on justice and efficiency via both online and offline feedback. After reviewing current judicial procedures from civil and criminal cases to court administrations; visiting foreign countries such as the U.S. and Singapore; researching foreign judicial systems such as Japan, German, Canadian, and Australian systems; and holding over 50 meetings to brainstorm new and trailblazing ideas, the task force team released a master plan for the future directions and targets of the new systems. Some of these plans are quite

24) Beopkwanui-Sabeophaengjeong-Chamyeoreul-Wihan-Kyuchik [Rules for Judge’s Participation in Court Administration], Supreme Court Rules No. 2647, Feb. 19, 2016, art. 4, art. 11. The Supreme Court of Korea enacted the “Rules for Judge’s Participation in Court Administration” were enacted on February 2016, creating a sub-committee of Judicial Informatization Support under the committee of Judicial System Reform. Honorable Judge Kang, Min-koo, Chief Judge of Busan District Court was elected as the first commissioner of the sub-committee and actively supports the Task Force Team. The sub-committee is constituted by judges, former judges, IT specialists and other opinion leaders in IT fields, and holds monthly conferences to address the output of the Task Force Team. The final proposals of the sub-committee will be submitted to the Supreme Court of Korea at the end of 2016 or in early 2017.

radical, as they involve changing the basic format of trials. Another plan requires the total reformation or transformation of the current e-litigation and IT systems. This will prove difficult to adopt, as the system requires as much as 500 or 1,000 million USDs for full implementation. For the entire project, 50 to 100 times the current budget must be poured into the Court for three to five years. Moreover, these new plans require feedback, communication, and policy review. However, some of these ideas are somewhat easy to be implemented, as they simply require refurbishing or rearranging the interfaces of our current judicial systems.

The Supreme Court has created a special committee on reengineering of the judicial informatization systems to review these plans by the Task Force Team. It is expected to receive practical review and feedback from the end-users of the system, including judges, court clerks, litigants, students, professors, and the public, and should be at the center of the reform process. This kind of co-work will hopefully guarantee a synergistic effect on the sustainability and stability of the system, which in the long-run will support trust and confidence in justice and courts.

Business Process Reengineering/ Information Strategy Planning

For these reasons, it is somewhat early to reveal this master plan for refurbishing the current electronic judicial system. However, it is possible to introduce several lessons learned and ways forward at this preliminary stage. Most of this information does not reflect an official opinion of the Supreme Court of Korea and needs confirmation of whether it will be implemented. However, it is timely to collect useful ideas for transforming measures to realize sustainable and efficient justice.

The first step for implementation will be the Business Process Reengineering and Information Strategy Planning (BPR & ISP),²⁵⁾ as was the

25) Business Process Reengineering involves changes in structures and in processes within the business environment. Information Technology plays a major role in Business Process Reengineering as it provides office automation, allows the business to be conducted in different locations, provides flexibility in manufacturing, permits quicker delivery to

case in the U.S. system in 2009, where the Administration Office of the Federal Courts in the United States exerted efforts to gather user requirements from all over the country. This process will be the basic starting point for our reengineering. To reduce the gap between the court system and the people's expectations, we must induce and encourage more participation from outside of the court. Professors, law school students, litigants, and lawyers all need to actively and positively be on board with the project to reengineer the court business process and to the court's plan information strategy.²⁶⁾ More feedback and more participating voices make it easier to achieve satisfaction for all. For instance, several lawyers from major Korean law firms suggested great ideas like electronic document and data sharing via XML and API technologies. This is a good example of our future model as an integrated system from the back-end users to the front-end users. The system we want to build is something like an organism whose components interact to generate effective functioning. As such, we should focus on feedback and input from the outside users to achieve a sustainable and efficient justice system. This could even include beta testers from outside of the court.

Free Access to legal information

Access to legal information, both online and offline, can become a strong and transformative enabler to accelerate key advances. The same conclusion is made by the Task Force Team for the Next Generation Judicial system in the implementation of its output. Access to legal information, including primary and secondary legal sources – such as laws, statutes, regulations and case law, etc. – can help people to sufficiently prepare for a trial, predict a court judgment, and trust the court's final judgment. Broad

customers and supports rapid and paperless transactions. Sotiris Zigiariis, MSc, BPR engineer BPR HELLAS SA, *Business Process Re-engineering-BPR*, INNOREGIO PROJECT 2000 at 2.

26) "We recognize that appropriate incentives, strengthening national and international policy environments and regulatory frameworks and their coherence, harnessing the potential of science, technology and innovation, closing technology gaps and scaling up capacity-building at all levels are essential for the shift towards sustainable development and poverty eradication." *Supra* note 9, at 3.

access to legal information helps create a conducive environment for the achievement of sustainable and efficient justice. A broad-based and shared knowledge of policies and norms throughout the court, academia, and society is essential to sustainable development. In this context, the next consideration is the depth and range of the legal information made available by an electronic system.

Unlike the WestLaw and LexisNexis systems in the U.S., Korea now has a free access policy for legal information. Legal empowerment through free access to law and court cases can help fight discrimination and safeguard the rights of all people, especially women, minorities, migrants, and persons with disabilities.²⁷⁾ The availability of legal information can also become a powerful instrument to promote and support changes in unsustainable patterns of pleadings. Also, by providing free access to legal information, official bodies can strengthen institutional transparency, engage a larger audience of stakeholders, and make many more people aware, at all levels, of both the laws that protect them and the laws that regulate behavior.²⁸⁾ Awareness and knowledge about laws and legal information and accessibility, including through interoperability, can be quite useful to promote legal justice and improvement.

Access to Court Records

Millions of court cases are stored in the Court system, and all the judicial processes are managed and operated electronically inside the courthouse. This system was first designed to be operated restrictively inside the courthouse by judges and court officials.²⁹⁾ Some information is

27) In a report on the civil and family court in British Columbia, Canada, it is recognized that free or subsidized services should be available to those who cannot afford them. ACTION COMMITTEE ON ACCESS TO JUSTICE IN CIVIL AND FAMILY MATTERS, *ACCESS TO CIVIL FAMILY JUSTICE: A ROADMAP FOR CHANGE 19* (2013). The Action Committee is a group broadly representative of all sectors of the civil and family justice system as well as of the public.

28) "By making judicial decisions more transparent, more trade and investment is likely, fostering economic growth." Hayo et al., *The Relevance of Judicial Procedure for Economic Growth*, CESIFO WORKING PAPER, CESifo Group, Munich, 2008.

29) The Supreme Court of Korea started to release its judgment papers and rulings in civil

delicate and thus classified to the public. Unlike in the U.S., all the court records are not open to public in Korea. Some explain that this is because we value privacy much more than the right to access court records. Some say that the court procedure is not a matter of public service, but a matter of individual affairs. The trial is open to the public, but it is majorly related to the benefit of the litigants. This kind of difference in understanding and of judicial practice creates a gap between Korea and the U.S. In the U.S., court records are basically considered public as long as they are not related to minors and private information or prohibited by court order.

As people's understanding of the right to legal access develops, their level of access to justice should also be elevated.³⁰⁾ However, privacy should be protected; thus, private information is not open to the public as long as it is not critically related to public life. As mentioned above, court records are supposed to be public information in the U.S. But in the U.S., the court also has a redaction rule and the litigant has a right to file a petition to be sealed to protect litigant's privacy and business interests. Electronic court records as well as judgment papers are much easier to access using the PACER (Public Access to Court Electronic Records) system.³¹⁾ Korean Judiciary already constructed a webpage for the public to access some court's judgments in civil and criminal cases from 2014. But this is not sufficient to the needs of users. It is also not sufficient for protecting privacy. It should be remodeled to ensure better access, particularly for academia.

With regards to criminal cases, although we redact the names and addresses of criminals and victims, most of the criminal cases have no redacted description of crimes, especially sex crimes, rape, robbery, assaults, etc. This means that the content of these cases are quite sensitive, especially for minors. It can be quite devastating, especially to the victims

and criminal cases at all levels of the court with redacted names and addresses from January 2013. *Supra* note 17, at xvii.

30) Privacy policy concerns also need to be balanced against countervailing public policy issues such as freedom of expression and government transparency in the internet context. A recent decision from the European Court of Justice (*Google Spain and Google v. Agencia Española de Protección de Datos and Mario Costeja González*, C-131/12, [2014]), popularly known as the right to be forgotten, highlights this debate. *Supra* note 22, at 225.

31) The PACER system has its worldwide web service maintained by the Administrative Office of the U.S. Courts at <https://www.pacer.gov/>.

or the victim's family if the crime is revealed by a publicly released judgment paper. Copycats are another concern in the release of detailed crime information. To obtain judicial confidence in justice, we should consider these potential consequences. I believe it is possible to find a way forward to harmonize the two ends without sacrificing one's need.³²⁾ Court information must be much more accessible to public in the future. But, it is not an easy decision to change our policy, and it is even more difficult to change current practices and systems. Despite this, I believe information sharing will guarantee the sustainability of the court system and the faith of the judiciary.

Artificial Intelligence/ Alphago judge?

What do we anticipate from future courts with respect to decision making? Some futurists predict that technology will replace humans in the future and possibly surpass human intelligence. If this is the case, a time could come where artificial intelligence, interfaced with electronic records and electronic litigation system, try a case, and render judgments instead of human judges. A few months ago, we watched a historic Baduk match hosted by Google Deepmind between Lee Sedol and AlphaGo. AlphaGo defeated Lee 4 to 1. AlphaGo is a computer program with an algorithm combination of machine learning and search techniques supported by dozens of super computers. It was initially trained to mimic human play by attempting to match the moves of expert players from recorded games.

Once it reaches a certain degree of proficiency, AlphaGo moves further by being set to play large numbers of games against other instances of itself. It looks like an autonomous and evolving artificial organ. In the future, we may be supported by this type of IT technology. This artificial intelligence "device" could be used in the legal realm as an Alpha-Judge or Alpha-Lawclerk to increase efficiency and to solve complex and difficult legal problems. In fact, to some degree, artificial intelligence technology has already been adopted in our judicial IT systems.³³⁾ Case search engine and

32) *Supra* note 18, at xviii.

33) Han-sang Cho & Joo-hee Lee, *A Study on Artificial Intelligence, Law and Argument*, 16

Smart Search recommendation modules are examples of these technologies. Moreover, in the future, an AlphaJudge could write a judgment paper instead of a human judge.³⁴⁾ These programs can organize civil cases by matching information and comparing complaints with answers. With an artificial intelligence program, the claims made by the parties and its citations can be checked using a legal database and then be filed accordingly. This intelligence can assess case progress by automatically checking the evidence and the pleadings of the parties. We may also see an AlphaProfessor or an AlphaStudent in college. Big data can also be handled by this kind of super computer-supported artificial intelligence device.

Despite all of these potential adaptations, one of the inventors of AlphaGo, Thore Graepel, says, “Although we have programed this machine to play, we have no idea what moves will come up with.”³⁵⁾ Even though AlphaJudge could calculate and consult every single case from the database, artificial intelligence cannot serve as a substitute for the human mind or feelings of justice.³⁶⁾ Judicial proceedings are not a matter of probability but real, human life, which should be handled by other humans, considering the very real consequences of legal decisions. No matter how advanced technologies may eventually become, technology cannot make decisions for humans nor can it judge humans. This will be another point of consideration in devising measures to realize sustainable and efficient justice.

Ubiquitous Access

Another attribute of information and communications technology that should be highlighted is ubiquitous access. Personal and laptop computer

LAW AND PRACTICE, no. 2, The Korean Association of Law and Practice, 2016 at 314.

34) Min Kyoung Song, *Research on judge's discretion*, 58 SABEOP NONJIP [SUPREME COURT LAW REVIEW], Supreme Court Library of Korea, 2015 at 572.

35) Cade Metz, *Google's AI Wins Pivotal Second Game in Match With Go Grandmaster*, WIRED.COM (Mar. 10, 2016). Available at <https://www.wired.com/2016/03/googles-ai-wins-pivotal-game-two-match-go-grandmaster>.

36) Jongmo Yang, *Prospect of the Legal Expert System*, 19 INHA LAW REVIEW, No. 2, Inha Law Research Institute, 2016 at 231.

markets have already been prevailed by the mobile devices market. Thanks to high speed internet and widespread free Wi-Fi zones, people can easily access web sites and web-based knowledge to get information. By using a virtual personal network system (VPN) and a virtual machine, we can even access internal court systems from around the world as long as the Internet is supported. As of now, I can personally access a court's internal system, even in New York, to research international law cases. I believe some US Judges and professors are actively using this technology as well. I also noticed a diplomat in the US Mission to the United Nations in New York using a blackberry, which is known as very safe for a VPN network from hacking to sending an urgent message to the Department of State in Washington DC.

However, there are some concerns regarding the use of this technology in court. One is security, and the other is governance.³⁷⁾ Most of the internal information of the Korean Court is now confidential to others. There is a report that internal leaking is the most frequent reason for security problems. We have almost 3,000 judges in Korea who work from 9 am to 6 pm at the courthouses. So, changing this practice will affect our judicial culture and governance. However, security problems can be managed, to some extent, by changing the policy of releasing court records to the public. For judges or court officials who may be pregnant or have kids, such a measure can prevent these officials from worrying about their family's well-being and office work. We have a smart office in the Seoul High Court and the Seoul District Court for judges posted to a court far away from their residence in Seoul. But if we introduce totally smart offices, it is possible to work at home without commuting to a courthouse located hundreds of kilometers from home. Not all court works are suitable for ubiquitous access. But, this kind of technology will indeed benefit the welfare of court workers and their families. As we experienced the judicial business process using electronic litigation, I believe we can also overcome concerns regarding judicial culture and governance and continue the implementation of sustainable and efficient processes.

37) In terms of privacy, setting a governance of one's personal information should be highlighted to bridge these concerns and benefits. Pil Jae Lee, *Private Information Protection Act in Ubiquitous Era*, Chungbuk National University Law School 2009 at 145.

Security and Efficiency

In the 2014 annual report of the U.S. Supreme Court, the Honorable Chief Justice John Roberts happily announced that the U.S. Federal Supreme Court, the last federal court in the U.S. that did not introduce the electronic filing system, would launch next generation (Next Gen) electronic filing systems in 2015.³⁸⁾ However, I cannot find any channel to access the new version of the e-filing system on the U.S. Supreme Court webpage. According to Jeffery Minear, Counselor to the Chief Justice, the Supreme Court postponed introducing it because of security concerns. This is not because the Court detected any eminent threat but because it found that more attention should be paid to prevent security holes that may be in the new Next Gen system.³⁹⁾ In Korea, unlike in the U.S., the Judiciary operates the registration system for all real estates and corporations. All the information for over 50 million real estate records and 10 million corporations is digitalized and stored in the Supreme Court IT Servers. A single hacking or instance of data loss could ruin the entire national financial system. Therefore, the Supreme Court has elected to check its monitoring system and four sets of data backup systems, and operates its own standalone cyber security center. In the future, as the threat of hacking goes up, the level of monitoring will be further fortified as well. As such, to attain a sustainable system, security issues must become a top priority. We are also, however, chasing efficiency at the cost of security. Efficiency and security must work harmoniously to create a sustainable system. I believe IT Technology will bridge these two concepts: security and safety. Actually, security beat efficiency especially for the court work. There are many

38) SUPREME COURT OF THE UNITED STATES, 2014 YEAR-END REPORT ON THE FEDERAL JUDICIARY 6 (2014). Also available at <https://www.supremecourt.gov/publicinfo/year-end/2014year-endreport.pdf>.

39) "While most of the Federal Courts of the U.S. have not yet set a date for when they will make the switch to Next Gen, earlier this year, California Southern Bankruptcy Court implemented the next generation Case Management/Electronic Case Files system. California Southern joined several other districts (KS, FLN), bankruptcy (AK, OR), and appellate (2nd, 9th) courts that converted to the new system last year." The Administrative Office of the U.S. Courts, PACER Service Center, *PACER Quarterly Newsletter*, April 2016 at 1.

security hurdles to get well protected judicial procedure and outputs, which diminish court's efficiency. But as technology evolves, this kind of leverage will benefit more from less cumbersome security methods. Many human interface skills, although still at prototype stages, can be efficiently used with top class security protections. This can be another measure for transforming IT systems.

Digital Divide

Although a treasure trove of information is available to us, access to information is not always guaranteed.⁴⁰⁾ There is a gap in those able to access information, which often negatively affects those of lower socio-economic backgrounds, people with disabilities, or even the elderly.⁴¹⁾ Throughout history, progress towards civilization did not come without its cost. Some are left out and left behind. But, it is the judiciary's role and responsibility to embrace those who have been alienated from society. Within the court itself, many are divided on this issue. Some judges complain that all electronic devices and skills are useless because they cannot learn those electronic skills or that electronic based-work will harm their health, especially their eyesight. As already mentioned, some complain that electronic documents are not so friendly for reading and memorizing. This will be another point to consider in the transformation of our judicial work an electronic-based system. We must make room for paper-based working methods even in the future. Technically, it is possible to build a system with dual functions for paper and electronic files at the discretion of the user. Compare to a paper-oriented or an electronic-oriented system, the double functioning transformation will benefit from the effectiveness and satisfaction of the judicial system. The double functioning enabler is the "IT technology." Furthermore, I would also like

40) Nearly seven of ten people in the bottom fifth of the population in developing countries own a mobile phone, improving their access to markets and services. *Supra* note 27, at 225.

41) In 2012 in Korea, the rate of internet accessibility of low-income people was 58.5%, disabled people 55.5%, old people 42.6% and people in rural areas 40.2%. *Supra* note 11, at 358.

discuss technology use among people with disabilities.⁴²⁾ When we plan a next generation or future model, we should have another option for the disabled, especially those with poor eyesight.

Conclusion

Information Communications Technology will become more prevalent by soliciting fancy and efficient methods, including artificial intelligence. For the court and judicial systems, it will propose useful measures to realize sustainable and efficient justice. As we have seen, technology constitutes an important vehicle for transitioning in this fast-moving IT era. In this sense, the judiciary is not immune from the undergoing revolutionary transformation with the “help or threat” of IT technology. With today’s technologies, we anticipate the unchanging values and ideologies of the judicial system to materialize even more. We must focus, however, on the core values and purposes of the judicial service. The justice system is human. It is, above all else, for humans and justice. Technology is an effective tool to facilitate our advancement, but its use cannot be the final goal we are striving for. I am convinced that as long as we have a robust mindset toward human and justice, the future is not so dreadful. Efforts to envisage and prepare for the future must continue. I am sure we can continuously seek future advancements, while reminding ourselves that the best way to predict the future is to create it.

Lastly, I would like to add an overarching set of ideas to the framework of future Judicial IT systems in courts that may include the following:

42) According to the U.S. Census Bureau, 1990b, of the 2.7 million older adults in Florida, more than 415,062 are disabled (defined as the inability to go outside the home alone [mobility limitation] or as the inability to take care of personal needs [self-care limitation]). Jury Service Accessibility for Older Persons and Persons with Disabilities in Florida, a collaborative project by the Southeast Florida Center on Aging of Florida International University and the Florida Supreme Court Commission on Fairness, *Jury Accessibility Study* (June 1999), at 2. A collaborative project by the Southeast Florida Center on Aging of Florida International University and the Florida Supreme Court Commission on Fairness, *Jury Service Accessibility for Older Persons and Persons with Disabilities in Florida*, JURY ACCESSIBILITY STUDY, June 1999 at 2.

- It could be anchored in strong ownership of the court but could also operate at the regional and global levels;
- It could reflect the diversity of thoughts, priorities, and policies of all the actors of trials, considering differences in levels and patterns of business process;
- It could be inclusive and transparent and encourage the participation of various stakeholders including but not limited to judges, court officials, lawyers, law practitioners, academia and other stakeholders.
- It could operate based on sharing information, experiences, and best practices and involve the provision to such stakeholders of constructive policy advice drawing on experience from a range of actors;
- It could be timely informed to all the level of people to ensure that no one is left behind; and
- It could include follow-up on progress made by other actors, including multi-stakeholders and the private sector, in supporting implementation of future plans.

It may be too early to raise the suggestion of transforming our judiciary for realizing sustainable and efficient justice. Some ideas seem to be too ideal or radical. But I believe this article can serve as a motivation or brainstorming exercise to explore methods for attaining sustainable and efficient justice. And finally, I hope more workshops and seminars will be held to to share ideas and make synergistic efforts to transform our judiciary for a better world with sustainability and efficiency from academia to courts.

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