

The Industrial Revolution 4.0: What it has to Offer

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The fourth industrial revolution (4.0) has a huge impact on how people communicate. It also brings opportunities and challenges. In some sectors, like manufacturing, retail and medicine, the industrial revolution 4.0 brings many advances and breakthroughs. This advance combines the physical, digital and biological worlds that create both opportunity and threat. Does the same thing happen to the legal system? What peril does technology bring to the legal profession? Technology-driven change has been playing an important role in the development of legal services all around the globe. It is being used with increasing frequency to improve speed and efficiency in the legal process. In the US, an example of technology-driven influence is e-discovery. Instead of conducting direct meetings to investigate the facts of a case through the rules of civil procedure manually, technology has enabled the use of e-discovery.

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Background

Everybody living in a modern world has been deeply affected by the scientific and fourth industrial revolution. From the food they eat and the clothes they wear to the way they communicate and the businesses they run; they are surrounded by technology. The majority of the people live in a world that is created by scientific and industrial changes.

Changes do not only influence the way people live and interact, but also their professions. Today, there are significant differences in the practice of journalism, accounting, agriculture, architecture and the health professions. Law and legal professions are not immune. However, there is a debate. Some argue that law and legal professions are immune from changes. This can be seen from precedents, statutes and regulation that do not have significant adaptation of legal techniques or practices to any of the new developments in science, technology or



industry. Judges today are doing the same things in the same way that judges did 50 years ago, and so do lawyers. The question is, whether this condition will continue.

Lee (1960), predicted in his article that 50 years after 1960 (which means 2010) the practice of law will continue to be the same as that in 1960 in several aspects. He further predicted that the lawyers' task of legal research will be different as new technology would be invented such as the invention of electronic data. This opportunity offers a lawyer the opportunity to do a complete job of legal research on any given problem within whatever limits may be specified as relevant. The electronic research ensures the research will be up to date, complete and efficient.

Loevinger's prediction is exactly right. Currently, legal professionals increasingly rely on artificial intelligence which would grow smarter as they process more information. The humongous data base consists of previous judgments, written laws and law journals which all provide more than enough material to carry out the legal research necessary to write legal documents. This would free legal professionals to focus on higher value-added legal services to clients. Another way in which the legal sector is changing is via peer network communities that allow for meetings and the sharing of knowledge and best practices. This better aligns legal departments and results in improved collaboration with other legal professionals as well as clients (Itumeleng).

Why does the legal sector need to change? The current progress in information technologies has taken place massively all over the world. This is evident from the growing number of automations, artificial intelligences, and the internet of things in almost all aspects of professions. An example of an automation is the use of a robot in the manufacturing industry. Compared to a human, a robot works faster, makes fewer errors, and has better quality. The industrial revolution 4.0 has led to machines that are able to combine various functions instead of a single function tool.

In the commercial law sector, clients investing in new markets need to enable to understand the opportunities and mitigate the risks of doing business in the new place. Client expectations have also changed as they demand more efficient and cost-effective services which involves finding information more efficiently.

The revolutionary change big data brings to the legal profession is done through devising strategies or assessing the merits of a case. The data and technology are able to scan, interpret and synthesise written documents. The technology is able to provide better and richer data and allow for looking for specific insights directly related to a current legal question.



However, there is no way that technology can replace the legal profession completely. For sure, technology will empower a new era of augmented intelligence with legal professions still making crucial judgments but with powerful tools to draw sharper insights. Machines are tactical but humans are strategic, while machines will speed up processes and make onerous tasks easier, humans will always guide the process (Itumeleng).

Areas of legal practice that will not change merely by using electronic data are analytical thinking. This is because in doing so legal professionals need to examine a legal issue using case by case basis and considering other important aspects of law enforcement such as justice and expediency. It is highly unlikely that technology will be able to do that.

Moreover, electronic data will not change any legal concepts, procedures or make the legal systems any more flexible or responsive in substantive principles to contemporary conditions (Lee, 1960). What technology can help is to provide tools for legal analytics that lawyers are more able to mine for results in large sets of data. It is important to find out developments in modern logic and experimental science which suggest desirability of new thinking in many areas of the law. For example, whether lawyers, judges and prosecutors can free themselves from their routine jobs in doing their functions? Do they have more chances and opportunity to do intellectual creation needed to keep the substance of the law as modern as its techniques?

Despite the advances the fourth industrial revolution provides, computer technology has created new types of hazards involving crime resulting from information technology which ignites serious public policy concerns. There are several problems posed by the use technology in the legal workplace. The use of technology inevitably creates dependency and possible abuse on the system. This vulnerability has created new opportunities for bad people to damage the work by gaining access to the system. When it comes to employment, the effect is astonishing. The fourth industrial revolution inevitably change the workplace. Automation of works can decrease the number of people needed to do the same work. This means that many workers will be forced to find new jobs or learn new skills.

This needs a judicial reformulation of doctrine and regulations. The goal of reform should be directed to make a competitive legislative framework that takes into account the changes brought by the new industrial revolution. Legislation that has been written before certain technology was invented that has the potential of having compliance challenges. In the absence of legislative solutions, the use of information technology will rely on a system that is incompatible and that fails to protect the legal profession from abusive practices. Thus, it is important to enact legislation that enhances rather than degrades the quality of work life (The Harvard Law Review Association).



Opportunities

In the United States, the effort to help the legal profession to transform itself into a full participant in the technology revolution started in 1983 (ABA Annual Report 1982-1983, 1984). Technology in this context covers the electronic and digital products that give lawyers access to information. It started with the introduction of a computer-based information retrieval system providing access to publications and activities of 2000 entities. This is considered an example of the effort to bring the legal profession and technology together.

In what has happened, the effort to use technology in legal work has been to help improve productivity within the legal profession. The result is improvements in services to clients and greater work on behalf of the legal system and the general public interest in an effective justice system (ABA Annual Report 1982-1983, 1984). The most used facilities enjoyed by legal professions include online conferencing, court e-filing, database, on-line legal services, and computer-created documents.

The first facility which the fourth industrial revolution has to offer is legal research. It is believed that the most significant contribution industrial revolution 4.0 can make to the practice of law is information. The value of legal work is determined by its accuracy, correctness, completeness, relevance and timeliness.

This is why, technology should be able to develop a significant body of legal research such as court judgment, written laws, journals and any other type of information necessary to deliver quality legal services and legal research. Information technology is an adaptation of the advances of the industrial revolution 4.0 to a more efficient and productive legal service (Qian).

The next use of technology can be for management purposes. Technology can also be employed as an internal management tool to make efficient and responsive managerial tasks. Many types of needs, such as organising case dockets, human resource management, and clerical matters all can be made more effective using the available technology. It can also be used to support planning and resource allocation by being able to identify the totality of cases, human resources, trial scheduling, and monitoring trial progress. By making this arrangement online, the court can assist the parties in the easiness and certainty regarding their trial.

Information technology enables lawyers in one city to send the document to lawyers in another city or country over the communication system. The other lawyer will be able to review the document instantly and working together on the same document. This can also be



used to register cases before court. Lawyers can register the case online and the court clerk will review it instantly.

Electronic filing is an example of the fourth industrial revolution on court operation. The immediate impact of this change is the more flexible deadline for submitting documents to courts (Richard, 2008). This is because the office hours can be extended from 4 pm to 11.59 pm on the same day. From the court's perspective, e-filing offers the promise of saving space on storage. It can also eliminate or greatly reduce the likelihood that court files will be lost when needed. Another benefit is that all materials filed in court can be accessed online by the public. Historically, American court files have always been technically open to public (Richard, 2008). Accessibility issue varies from one jurisdiction to another. In Indonesia, in the past, even though the trial proceeding is open for public, it is very rare that the public can access the documents. With e-filing and the publication of Supreme Court judgment on the website, there is no chance for accessing the documents.

Electronic filing is the major development in some developed countries like the US and Australia. In 2006 in the US, more than thirty-one million cases are on the federal filing system, and more than 320 attorneys and others have filed documents in federal court over the Internet (Jonathan, 2006). In Indonesia, electronic filing only started in 2018. On the 4th of April 2018, the Indonesian Supreme Court issued Regulation No 3 of 2018 concerning Electronic Court Case Administration (SC Regulation No.3/2018). The regulation introduced the electronic court filing system in which it changes the procedures for filing court submissions including: claim, statement of defense, reply, rejoinder and conclusion to the court.

Before the online court was recognised, anyone could look up anything in the court records, but as a practical matter public access was limited. They can only look at the records by going to the courthouse. Online access has changed that by making it possible for anyone with access to the Internet to access court records at any time and to search the records in a more convenient way. However, the facility to get access to court's documents carry some risks. For example, in a divorce case, by putting the court records online, the public can come through the details of the cases. This may endanger family relationships as well as unnecessary reputational risks for the couple and their family members before public eyes. The same thing happens when the litigants are a business entity. Reputation becomes a serious issue that may very well negatively impact the business prospect. In bankruptcy cases, there is so much personal information because the petitioners often have to reveal details about their assets and debts. Thus, in respect to e-filing, the increased access to court's files has the potential to intrude on litigants' private life and personal information.



The third use of information technology is as a teaching tool in legal education. What does the legal education have something to do with the legal profession? Legal education is a professional education. The law school produces graduates to fill positions like judges, lawyers, and prosecutors. Thus, the law school is responsible for providing essential skills, legal knowledge, and also developing competence in their students.

To prepare students to practice law, technology courses have been included in law school curriculum to give students' opportunities for learning about the automation of legal works; how to design and build legal information system; and, how to use technology to create computer-based legal documents.

In respect to the teaching method, information technology can be used to make legal education more standardised across the nation and more accessible. This includes the law school as well as continuing legal education for lawyers, judges, prosecutors and everyone working in legal sectors. There are important changes, for better or for worse, to the law students and professor's academic's life. They become less dependent on books, more involved in live seminars, distance learning, collaborative works with other disciplines or other colleagues, as well as online publications. Those facilities offer legal education less cost to participants. Thus, technology has altered the academic life of law students and legal education (Richard, 2008).

Lastly, advances of technology also benefit professional association. As the legal profession enters a very competitive era due to the free market, it is important to make efforts to help members of the legal profession be more advanced in their knowledge and skills as well as in developing their network. This is because lawyers face more challenges in putting technology to use in their work.

The industrial revolution 4.0 increases the access of the lower and middle class community to legal documents. Technology enabled computer-created legal documents can be easily, and sometimes freely, accessed by public. The issue to be discussed is whether a provider of the software or platform computer-created legal document can be considered as a practice of law. The platform allows customers to enter information in response to questions on a questionnaire, that then populates that information into blanks in a pre-drafted form, and that prints the form for mailing to the customer, who can then use it to advance the customer legal interest.

When using robots, sometimes people will misuse robots in a manner that is neither negligent nor criminal but nevertheless threatens to harm others. Data collection practices will not only present legal oversight challenges to those tasked with gathering it, but also present novel challenges to those seeking to secure robots against external threats. Professor Balkin states

that “the more opportunities for innovation, the more possible targets for hacking.” Accordingly, the very same applications that now gather unprecedented amounts of data from users are also likely to pose unprecedented risks in the event that such data gets into the wrong hands (Mark and Bryan, 1341). Even if they are not hacked, the mere presence of these devices can change human behaviour. People act differently when they think they are being watched or listened to, even if the thing doing the watching is only a picture of a pair of eyes taped to the computer (Mark and Bryan, 1314).

Routine legal work, such as employment contracts, was once filed by a human resources department; nowadays it is done online and directly with the client organisation, and this type of legal service is deemed to become a more sustainable approach. Online technologies have thus allowed lawyers to virtually prepackage and offer their experiences to clients in a more efficient and effective manner. The entire process is termed as the commoditisation of legal services. Commoditisation is the process through which providers charge for access to their online services and offer way lower costs to client. In a traditional setting, clients are unable to afford legal services due to the traditional hourly-billing model. Corporations, small and medium sized businesses, and individual consumer started to demand fast legal services for a low cost (Qian).

The concern related to computer-created legal documents is how to protect the public from potential harm. If left unregulated and unchecked, the platform provider endangers clients through incompetence or inadvertence, and stirs up litigation that might have been avoided under the regulatory oversight of the bar. There must be regulation of the practice of law through the internet. Unauthorized practices of law restriction exist to protect the public, the operations of the courts, and the legal profession.

Challenges

Despite the huge benefits conferred by the use of technology in the legal profession, there are so many challenges that make effective utilisation of technology in some jurisdictions seem very hard. The first challenge is the cost. A high amount of money needs to be invested if the court, law firm and law school is to be technology compliant. They need devices, hardware, software to be purchased and also constantly upgraded and maintained. Moreover, quality online legal research is usually costly.

The second challenge is on the human resources. While technology can be used to help the legal service better, the people working in this sector are hesitant to accept new technology. Judges, lawyers, prosecutors, in fact, are sometimes hesitant to change and therefore slow in using technology in their work. The reluctance can be due to a lack of training and exposure to basic data processing concepts (ABA Annual Report 1982-1983, 1984). It can also due to



the fear that they may not have the competence to use new technology. Also, they fear that technological changes might cause them to lose their jobs. It is not an easy task to help legal practitioners be more comfortable and familiar with technology. It needs a leader in efforts to bring technology and the legal profession together.

The big opportunities for the industrial revolution 4.0 in Indonesia are mostly due to the demographic factor. The large population in Indonesia of 240 million, is considered an incentive for the industrial revolution 4.0. With a population over 145 million connected to the internet, it is hoped that technological revolution is within reach. This is probably true when talking about manufacturing sectors. However, the demographic factor has little contribution in the legal sectors.

Conclusion

Lawyers think of the law as subjective and intuitive (ABA Annual Report 1982-1983, 1984). Industrial revolution 4.0 cannot replace lawyer legal reasoning and judgment. What it can do is support and complement that judgment and legal reasoning. New technology has changed the document filing method, but the adoption of the industrial revolution 4.0 in court can occur in hearings or trials and is yet to come. The Indonesian court, for example, has not substituted personal appearance hearings with video conferencing to conduct oral arguments.

There are many potential new applications of technology within the legal system, including legal analysis. Information technology may tie the courts and the lawyers together electronically so that they can work together without delay. It will require some modification of regulations.

Rules should be enacted to protect privacy and security concerns relating to electronic filing of documents and the public availability under this subsection of documents should be filed electronically. Technological advances bring new compliance challenges because the legislation may have been written before the invention of technology.

What is needed is a rule on data protection that regulates how companies, courts, platform owners and lawyers protect a citizen's personal data. Non-compliance should be subject to harsh penalties. The goal of legal reform should be the creation of a competitive legislative framework that takes into account the changes brought by the new, fourth industrial revolution (Mukhova, 2018).



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