Suggestions for the establishment of an ethical and regulatory framework for artificial intelligence

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1. Introduction

As the scope of artificial intelligence applications becomes more widespread, its impact on human life is also increasing. Therefore, several countries in Europe, North America and Asia have agreed on the need to formulate appropriate regulatory measures to ensure that artificial intelligence complies with universally recognized moral and ethical values. It should be pointed out that supervision is not the same as restricting technological development but rather complementing it. This can be seen from the example of the Large Language Model (LLM) being popularized in Hong Kong in the past two years.

When the first large-scale language model like ChatGPT first appeared, several institutions (such as universities) in Hong Kong made different judgments on whether to allow its use. This has had a limiting impact on the widespread application of the technology in Hong Kong. Considering that LLM may pose substantial risks, such as plagiarism, infringement of intellectual property rights, data security, and the spread of false information, the community takes time to arrive a better understanding of those risks, and to establish corresponding processing mechanisms and controlling tools. The establishment of regulatory codes does not restrict the development of LLM in Hong Kong, but rather contributes to its subsequent popularity.

We believe that short of consensus on the normative standards to address problems arising from technology, there will be limited room for widespread application and full development of

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smart technologies. Therefore, there is a need to establish a more forward-looking regulatory environment to attract more artificial intelligence companies to the Hong Kong market. This would be an important step in developing Hong Kong as an international data center. An effective management environment can reduce the uncertainty of regulatory prospects and shorten the transition period by building long-lasting norms and standards.

2. The orientation of artificial intelligence regulation

Governments around the world have had a series of discussions on regulating artificial intelligence and have reached a consensus on major principles[3]. However, the approach to regulating the technology is not entirely consistent among all the stakeholders. The "Artificial Intelligence Act" passed by the European Union in December 2023 focuses on the "risk-based" method and distinguishes four categories of artificial intelligence technology based on the underlying logic of human survival, personal safety, and fundamental human rights. The industry must comply with respective requirements when developing artificial intelligence technology, otherwise, EU regulatory agencies may intervene and prohibit the use of related technology[4].

Table 1. *EU Artificial Intelligence Act*

	Risk level	Example	Regulatory approach
Type 1	Unacceptable	**Pose a serious threat to humans:** remote biometric identification; crime prevention and law enforcement	Complete prohibition
Type 2	High	**Possible infringement of personal safety or basic human rights:** Real-time monitoring of traffic and other infrastructure; tracking personal medical or educational information	Strict review by all parties before launch and during application
Type 3	Limited/low	Generative AI, such as ChatGPT	Public disclosure of sufficient information
Type 4	Minimal/none	Systems that filter out toxic or spam emails; gaming software	No specific regulations

Table 1 shows the EU regulatory regime based on the different risks that may arise from the application of artificial intelligence technology. There are relatively few regulations for applications with "extremely low" or "low" risk levels. However, when technological applications may infringe on personal safety or basic human rights, they will be subject to strict scrutiny by all parties.

The United States emphasizes the role of market participants and places relatively higher emphasis on **"application-oriented"** governance. However, artificial intelligence developers still need to take into account both technological development and principles of fairness and privacy. Although the U.S.

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[3] For example, in July 2023, United Nations Secretary-General Antonio Guterres called for the establishment of a global AI regulatory agency; at the Artificial Intelligence Security Summit held in November 2023, multiple governments jointly signed and issued the "Bletchley Declaration", committed to (1) identifying AI security risks and (2) developing their own risk-based policies while collaborating as appropriate.

[4] Please refer to the EU website: https://www.europarl.europa.eu/news/en/press-room/20231206IPR15699/artificial-intelligence-act-deal-on-comprehensive-rules-for-trustworthy-ai.

Federal Trade Commission has the authority to supervise local regulatory agencies. However, local governments as major regulatory agencies in play rely more on industry groups to constrain the behavior of various market players through the formulation of industry codes or commitments[5].

Currently, there is no official organization in Hong Kong specifically responsible for regulating the development of artificial intelligence. As for the official documents that regulate artificial intelligence, the earliest one was the "Guidelines on Ethical Standards for the Development and Use of Artificial Intelligence" issued by the Office of the Privacy Commissioner of Hong Kong in 2021. It requires companies to comply with the "Personal Data (Privacy) Ordinance" when developing and using artificial intelligence. It also attaches a "Self-Assessment Checklist" to help organizations determine whether they have adopted the measures recommended in the guidelines.

In August 2023, the Office of the Chief Information Officer of the Hong Kong Government released a more complete "Artificial Intelligence Ethical Framework" to assist government departments in adopting artificial intelligence and big data technology while incorporating ethical elements into it. The Hong Kong Government pointed out that the guiding principles, guidelines and assessments of the AI Ethical Framework are also applicable to other organizations.

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[5] For information on the regulatory status of artificial intelligence in different regions, please refer to Feng Yifan's "Overview of Artificial Intelligence Regulatory Systems", People's Court Daily, 2 Nov 2023; Cecilia Kang & Adam Satariano, Five ways AI could be regulated, New York Times, 7 Dec 2023.

Table 2. *Hong Kong's "Artificial Intelligence Ethical Framework"*

Main users	✓ IT Planner ✓ System Analyst ✓ System Architect ✓ Data Scientist	
Leverage influence		
Artificial Intelligence Ethical Framework	■ **Customized ethical framework** 　◆ Artificial Intelligence Ethical Principles 　◆ Artificial Intelligence Governance Structure 　◆ Artificial intelligence life cycle 　◆ Artificial Intelligence Implementation Guidelines ■ **Artificial Intelligence assessment** 　◆ Impact assessment of artificial intelligence applications ➢ **Existing standards for IT and planning** 　◆ Project management 　◆ IT security policies and guidelines 　◆	1. Transparency and explainability 2. Reliability, robustness and security 3. Fairness 4. Diversity and inclusion 5. Human supervision 6. Legality and compliance 7. Data Privacy 8. Security 9. Accountability 10. Benefit 11. Cooperation and openness 12. Sustainability
Implementation		
Artificial Intelligence Applications	✓ Project strategy ✓ Project planning ✓ Project ecosystem ✓ Project development ✓ System development ✓ System operation and supervision	

From the above development, we can see that the characteristics of Hong Kong's regulation of artificial intelligence are focused on enterprises and their developers. Secondly, these guidelines are not legally enforced, because the Hong Kong government believes that the artificial intelligence industry is not different from other general enterprises and is subject to the existing laws and regulations in Hong Kong.

Secretary for Innovation, Technology and Industry Sun Dong pointed out that the Internet is not an "unreal" world that is beyond the law – most laws used to prevent crimes in the real world are also in principle applicable to the Internet. For example, the Crimes (Amendment) Ordinance 2021 can regulate the offense of publishing or threatening to publish private images without consent. At the same time, there are other laws that can deal with the dissemination of false or inappropriate

information[6].

3. Recommendations on the ethics and governance of artificial intelligence

Artificial intelligence is still evolving with significant differences in development across regions and technologies and varying impacts on different industries and sectors. Establishing a framework for regulating artificial intelligence hence needs patience and careful assessment to the policy environment. In this section, we propose some recommendations and thoughts based on the results of our study, hoping to contribute to the process of regulating artificial intelligence for the sustainable use of the new technology in Hong Kong society and beyond.

3.1 Governance framework should be "application-oriented" and build a database of cases to avoid hollow ethical principles

The "Artificial Intelligence Ethical Framework" of the Office of the Chief Information Officer of the Hong Kong Government lists 12 ethical principles related to artificial intelligence, including transparency, reliability, fairness, diversity, legal compliance, openness, etc. (see Table 2). Our earlier policy recommendations have pointed out that in the case of "decontextualization", the public tends to maximize ethical values, which means that every ethical value will be considered as "important"[7].

Therefore, simply listing ethical principles may mislead the public into thinking that all ethical values can be unconditionally satisfied in the development of artificial intelligence without reminding them the need for trade-offs. We have interviewed practitioners in the artificial intelligence industry. They have all admitted that this kind of slogan-like program is not helpful in formulating specific policies.

We suggest the Hong Kong government consider the differences in the ethical attributes of artificial intelligence applications based on different scenarios when drafting a regulatory framework. This can be achieved by establishing a case database, where different scenarios highlight different ethical principles. A systematized database makes the ethical implications of an AI application easier for the public to anchor on when a new, unfamiliar dispute arises.

For example, our previous research has shown that the ethical principles and values that citizens are mostly concerned about vary depending on the application scenarios of smart technologies. Respondents are more concerned about principles of personal value, such as privacy and freedom of movement, when it comes to "health code systems" and "fraud detection systems" (applications). However, in terms of self-driving cars (heavy machinery), citizens tend to pay more attention to the safety-related values like robustness.

Establishing an application-oriented governance framework, based on different scenarios, will allow people to form a stable perception of smart technologies under an anchored-type framework – which systematically groups different AI applications with similar ethical

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implications as a type, thereby making subsequent judgment and governance within a type more specific and simpler.

3.2 Establish a multi-stakeholder communication platform; highlight the role of third-party professionals

When we communicate with different stakeholders, they all believe that one of the main reasons for the difficulties in regulating artificial intelligence today is the abundance but fragmentation of information, which is not facilitative to promote technology literacy of the public. Therefore, they all believe that experts are the core of effective governance in the field of artificial intelligence. This idea can be further divided into two perspectives:

• The first perspective: Technological literacy should be defined by experts or authorities and then promoted to citizens or consumers unilaterally;

• The second perspective: Technological literacy should be fostered through interactions between the public and experts. Knowledge mediated by third-party experts, who promote better communication, is easier to be accepted by the public rather than tech expert alone.

The first one is based on trust in an expert's authority and suggests acknowledging their ability to convey true and accurate technical expertise. The second one focuses more on the public's discourse power in learning and developing technological literacy (ethical principles), ensuring that the public is fully informed.

As we believe that the second type of opinion is more advisable, we suggest establishing a multi-party communication platform in the process of building an artificial intelligence regulatory framework. The regulatory framework for artificial intelligence in Hong Kong should be established through consultation and other consensus-building methods to enhance the public's technological literacy in artificial intelligence.

Undeniably, a regulatory framework for artificial intelligence can be constructed under the unilateral leadership of the government and experts (such as the current "Guidelines on Ethical Standards for the Development and Use of Artificial Intelligence" and "Artificial Intelligence Ethical Framework"). However, the lack of public participation and the absence of society as a stand-alone actor limits the public's understanding of artificial intelligence. Hence, the expert's work in a "closed doors" format may be rather counterproductive, considering the accelerating speed of AI development.

Our previous survey has shown that nearly 60% of the respondents believe that if ethical dilemmas arise in the application of artificial intelligence, the opinions of "affected citizens" should be given top priority. Therefore, the public's feelings and thoughts should be taken into consideration when creating the legal framework. Although the public may not have a sufficient understanding of artificial intelligence technology, experts can interact more with the public, giving public actors a greater voice and building more consensus.

We suggest strengthening communication and dialogue between researchers, operators of artificial intelligence technology and the public by sharing practical experience and examples to increase public confidence in artificial intelligence technology. On the other hand, the government can consider increasing support for statutory institutions such as the Privacy Commissioner's Office and the Consumer Council, as well as third-party professional organizations such as universities, to increase the reliability of artificial intelligence technology.

3.3 The government's role in regulation of the technology should be clearly defined

As mentioned earlier, the European Union and the United States adopt different regulatory directions for artificial intelligence. The European approach presents a risk-based approach set by the government, while the American tends to rely on the industry to formulate self-regulations and codes of practice. Regardless of the perspective, the government must have a certain degree of intervention. In particular, when artificial intelligence technology exceeds the moral boundaries recognized by society, the government as the holder of public authority should aim to curb it[8]. There are two reasons why society cannot completely allow private enterprises to develop artificial intelligence technology:

• Enterprises lack the motivation for self-regulation: Enterprises often prioritize their commercial interests over the public or consumer interests. Private companies are rarely punished unless their behavior violates the law, even if their actions have negative effects on society.

• Enterprises lack the capacity for self-improvement: enterprise's capacities and trust come from its own consumers, rather than the entire public. If strong competition between enterprises (such as competition between small, medium-sized start-ups and large companies) coexists with the lack of clear and consistent needs among consumer groups, it becomes difficult for enterprises to reach uniform standards or consensus over the regulation of technology.

To enhance the motivation for corporate self-regulation, it is necessary to formulate mandatory laws to regulate the application of artificial intelligence. To improve corporate capabilities, external actors, such as public institutions and third-party professionals, can provide further assistance. However, the government with its immense social resources needs to play a crucial role in overcoming the above-mentioned issues.

It should be noted that government intervention should not affect the autonomy of enterprises. Free market competition is the main driving force for commercial innovations in the sphere of artificial intelligence. Neglecting or excessively intervening in enterprise operations will weaken this driving force and the overall freedom of innovation, leading to technological stagnation. Therefore, the government's positioning needs to be properly calibrated, coordinating all sectors of society to achieve regulatory goals with no harm to commercial technological innovations.

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[8] In the United States, which advocates industry regulation, the Senate Judiciary Committee held a hearing in May 2023 and summoned OpenAI CEO Altman to testify. Many congressmen warned that artificial intelligence technology cannot be monopolized by individual companies, otherwise, it could lead to terrifying consequences. Please refer to the "OpenAI CEO US Hearing" by the Central News Agency, downloaded on January 4, 2024, from: https://www.cna.com.tw/news/ait/202305170007.aspx

4. Summary

With the continuous development and improvement of artificial intelligence technology, we can foresee its widespread application in various fields, which may also bring new challenges and risks.

Based on our research and discussions with industry, it is not advisable to adopt a "laissez-faire" attitude toward the development of artificial intelligence, especially given the vision of developing Hong Kong's function of an international data center. Hong Kong must establish a comprehensive and forward-looking approach to data management and artificial intelligence applications, as well as a transparent market in which participants have high level of technology literacy and trust among them. At the same time, government intervention needs to be kept moderate as excessive intervention will stifle innovation.

We reiterate that regulating the application of artificial intelligence is not a matter of merely restricting technological development. Without communal consensus on regulatory standards, society will hesitate to move forward due to fear of the risks associated with the innovations. We believe that an effective regulatory environment reduces uncertainty about the normative aspects of technology and shortens the transition period for building necessary regulations.

Therefore, the government, industry, and the public at large must improve communications and work together to forge a consensus on the safe and legal use of artificial intelligence technology. We need to establish an "application-oriented" regulatory framework. The 'application-oriented' regulatory framework we proposed above will lay a solid ground to support the sustainable use of the evolving technology: set up a database of cases, support third-party professionals, experts and scholars to deepen related research, and conduct more public education on the application of the new technology and related issues.