

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

EIGHTEENTH CONGRESS
Third Regular Session

House Bill No. **10457**



Introduced by Representative PABLO JOHN F. GARCIA

EXPLANATORY NOTE

The Constitution provides that “Science and technology are essential for national development and progress. The State shall give priority to research and development, invention, innovation, and their utilization; and to science and technology education, training, and services [x x x].”¹ It likewise states that “The Congress may provide for incentives, including tax deductions, to encourage private participation in programs of basic and applied scientific research [x x x].”²

Based on the World Economic Forum’s Readiness for the Future of Production Report 2018, the Philippines is not yet prepared to manage the Fourth Industrial Revolution (FIRe) as manifested in its weak performance across the drivers of production, which include technology and innovation, human resources, global trade and investment, institutional framework, sustainable resources, and demand environment, among others.³ The Fourth Industrial Revolution is a way of describing the blurring of boundaries between the physical, digital, and biological worlds.⁴

Due to the expansive nature of FIRe, it is a pragmatic and strategic decision to focus on its key aspects, especially since resources are limited.⁵ Of all the FIRe era’s new and forthcoming technologies, more than seventy percent of enterprise leaders judged Artificial Intelligence (A.I.) to be the most disruptive compared to cloud computing and

¹ Const. art. XIV, § 10.

² Const. art. XIV, § 11.

³ See generally World Economic Forum, *Readiness for the Future of Production Report 2018*, available at http://www3.weforum.org/docs/FOP_Readiness_Report_2018.pdf.

⁴ Devon McGinnis, *What Is the Fourth Industrial Revolution?*, available at <https://www.salesforce.com/blog/what-is-the-fourth-industrial-revolution-4ir/>.

⁵ Department of Trade and Industry, Artificial Intelligence, *Artificial Intelligence Roadmap*, available at <http://innovate.dti.gov.ph/resources/roadmaps/artificial-intelligence/>.

blockchain.⁶ A.I. could contribute US\$15.7 trillion to the global economy by 2030⁷ and more than US\$92 Billion to the Philippine Economy.⁸

This bill seeks to support and institutionalize the Department of Trade and Industry's Artificial Intelligence roadmap to help realize the potentials of A.I. in the Philippines:

The roadmap describes the implementation, infrastructure, and investments needed to cover the four (4) important dimensions for A.I. readiness, namely: (1) Digitization and Infrastructure, (2) Research and Development, (3) Workforce Development, and (4) Regulation. The above dimensions are then supported by seven (7) measurable strategic imperatives and forty-two (42) strategic tasks. All of which have been defined so as to ensure that we have clear metrics in terms of tracking the progress of our efforts towards a competitive A.I. Economy with respect to the global arena.⁹

We must also answer the call of the International Labour Organization to create a human-centred approach for the future of work that focuses on increasing investment in people's capabilities, strengthening the institutions of work and promoting inclusive and sustainable economic growth, globally-competitive industries, and full and productive employment and decent work for all.¹⁰ About 31 percent [of current employment in analyzed occupations] are associated with "collapsing" occupations, or occupations where jobs have a high likelihood of being replaced by machines with little opportunity for transformative digitalization.¹¹ The Philippines is definitely no exception. We must ride this wave of inevitable change and prepare accordingly.

Developing A.I. initiatives will help create jobs, spur innovation, and empower various industries. It will also enable all allied technologies to be better than what they currently are for the upliftment of every Filipino life.

In view of the foregoing, the urgent passage of this bill is earnestly sought.



Rep. PABLO JOHN F. GARCIA
3rd District, Province of Cebu

⁶ *Id.* citing NewVantage Partners LLC, *Big Data Executive Survey 2018*.

⁷ *Supra* note 5. citing PricewaterhouseCoopers, *Sizing the prize*, available at <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html>.

⁸ *Supra* note 5 citing EDBI, *Artificial intelligence could deliver a US\$1 trillion uplift to Southeast Asia's GDP by 2030*, available at <https://www.edbi.com/news-room/latest-news/artificial-intelligence-could-deliver-a-us1-trillion-uplift-to-southeast-asia-s-gdp-by-2030>.

⁹ *Supra* note 5.

¹⁰ International Labour Organization, *The Future of Work in the Philippines: Assessing the impact of technological changes on occupations and sectors*, available at https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-manila/documents/publication/wcms_762207.pdf.

¹¹ *Id.*

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AN ACT
ESTABLISHING A NATIONAL STRATEGY FOR THE DEVELOPMENT OF
ARTIFICIAL INTELLIGENCE AND RELATED TECHNOLOGIES, CREATING FOR
THIS PURPOSE THE NATIONAL CENTER FOR ARTIFICIAL INTELLIGENCE
RESEARCH, AND FOR OTHER PURPOSES

Be it enacted by the House of Representatives and the Senate of the Congress of the Philippines in session assembled:

CHAPTER I
PRELIMINARY PROVISIONS

Section 1. Short Title. - This Act shall be known as the “*Artificial Intelligence Development Act*”.

Section 2. Declaration of Policy. - Science and technology are essential for national development and progress. The State shall give priority to research and development, invention, innovation, and their utilization; and to science and technology education, training, and service. It is thus the policy of the State to harness the potential of Artificial Intelligence to create jobs, empower industries, spur the development of the economy, and improve the life of every Filipino. The State shall adopt a human-centred approach for the future of work that focuses on increasing investment in people’s capabilities, strengthening the institutions of work and promoting sustained, inclusive, and sustainable economic growth, and full and productive employment and decent work for all.

Section 3. Definition. - For purposes of this Act, *Artificial Intelligence* (“A.I.”) shall mean the simulation of human thought processes in a digital, computerized, or artificial model.

CHAPTER II
NATIONAL CENTER FOR ARTIFICIAL INTELLIGENCE RESEARCH

Section 4. *Establishment; Board.* - There is hereby established a National Center for Artificial Intelligence Research (“NCAIR”), which shall be attached to the Department of Science and Technology for policy and program coordination and shall be headed by a Board composed of the following members:

(a) The Secretary of the Department of Science and Technology, who shall act as the chairperson;

(b) The Secretary of the Department of Trade and Industry as co-chairperson;

(c) One (1) representative from the Department of Information and Communications Technology;

(b) One (1) representative from the Department of Labor and Employment;

(c) One (1) representative each from the Department of Education and the Commission on Higher Education;

(d) One (1) representative from the Department of Computer Science, University of the Philippines-Diliman;

(e) Three (3) members representing professional or industrial artificial intelligence or information communications technology (“ICT”) organizations to be selected by the chairperson from among the list of nominees submitted by Philippines-based ICT professional organizations; and

(f) Three (3) members representing non-governmental ICT or artificial intelligence advocacy organizations to be selected by the chairperson from among the list of nominees submitted by the country's non-governmental ICT organizations.

The Board may avail itself of the expertise and services of local or international resource persons who are of known expertise, knowledge, and/or skill during deliberative sessions.

The Board and its resource persons shall be entitled to such reasonable *per diems*, allowances, and honoraria as may be allowed under existing laws, rules, and regulations.

Section 5. *Function of the NCAIR.* - The NCAIR shall be the primary policy-making and research body concerned with the development of artificial intelligence and allied emergent technologies in the country. It shall focus on studying, harnessing, advancing and/or transferring any beneficial A.I. creations or systems for the upliftment of Filipino innovators, workers, industries, businesses, and consumers. It shall also promote the education, training, and skills-development of Filipinos in this area for employment and professional advancement.

The NCAIR shall aim to capacitate enterprises to produce new products, processes, and services using A.I. The NCAIR shall endeavor for A.I. to benefit every kind of industry to help minimize waste and spoilage, anticipate operational requirements by the use of predictive technology, enhance business decision-making through advanced analytics, and any other similar goal the Center may determine consistent with the declared policies of this Act and the provisions of Chapter IV.

Section 6. *Composition and Size of Personnel of the NCAIR.* - The personnel of the NCAIR shall be primarily staffed by Filipino scientists. The composition and size of such personnel shall be determined by the chairperson, who may create such offices, divisions, and units under the NCAIR as he may deem necessary, and for this purpose, the chairperson is authorized to adopt and implement the corresponding staffing patterns; Provided, however, that the positions, titles, and salaries of its officials and personnel shall be in accordance with the position classifications and salary grades in the Civil Service Rules and the Salary Standardization Act.

CHAPTER III INNOVATION AGENDA

Section 7. *Role of the National Innovation Council.* - The National Innovation Council (“NIC”) created under Republic Act No. 11293, otherwise known as the “Philippine Innovation Act”, shall give priority to the development of artificial intelligence in the National Innovation Agenda and Strategy Development.

The NIC shall incorporate in its overall vision the strategies and objectives outlined in Chapter IV.

Section 8. *Government-Industry-Academe Synergy.* - To promote synergy among the government, the private sector, and the academe, the Secretary of Science and Technology, Director General of the National Economic and Development Authority, Secretary of Information and Communications Technology, Secretary of Trade and Industry, Secretary of Labor and Employment, Chairperson of the Commission on Higher Education, Secretary of Education, and the Executive Members of the National Innovation Council shall form an Artificial Intelligence sub-group under the NIC.

CHAPTER IV
NATIONAL ARTIFICIAL INTELLIGENCE STRATEGY

Section 9. *Regulation.* - The State shall regulate the A.I. ecosystem and ensure that it functions conscientiously, fairly, and ethically by:

(a) Ensuring industries and businesses, especially micro, small, and medium enterprises, can freely compete in an A.I.-driven and data-driven environment;

(b) Reviewing and transforming business regulations for ease of business, especially in launching new products, platforms, and services; and

(c) Establishing a committee of experts in data and A.I. ethics who will guard against abuse and misuse of data and A.I. programs.

Section 10. *Research and Development.* - The State shall endeavor to accelerate innovation with A.I. as well as master and push its boundaries; it shall help industries innovate, nurture and support A.I. startups, and transform institutions by:

(a) Developing competency in A.I. research as measured by publications, patents, and technology disclosures;

(b) Inviting international experts that can bring in new A.I. technologies and/or A.I. startup or business ideas;

(c) Providing funding for A.I. algorithmic innovations

(d) Strengthening academe-industry partnerships in A.I. research and development;

(e) Incentivizing Higher Educational Institutions to promote A.I. research and development internships with local private institutions;

(f) Creating quantifiable measures to track, coordinate, and improve government services and policies for industries;

(g) Strengthening technology transfer between Higher Educational Institutions or Research and Development Institutions with industry;

(h) Identifying and prioritizing sector-specific research and development projects that can maximize the impact of A.I. research;

- (i) Tracking and analyzing the quality and quantity of jobs displaced, created, and/or transformed as a result of A.I. academe-industry partnerships;
- (j) Identifying and supporting local A.I. startups;
- (k) Developing state-owned venture funds to support A.I. startups;
- (l) Incentivizing and encouraging investors to support promising A.I. businesses; and
- (m) Supporting or co-hosting A.I.-themed competitions, events, and conventions.

Section 11. *Digitization and Infrastructure.* - The State shall improve data access and data value extraction, and build a robust networked environment by:

- (a) Making internet accessible and affordable;
- (b) Improving internet quality;
- (c) Ensuring that the internet access of enterprises is reliable, secure, and at least within global averages;
- (d) Ensuring government agencies and other public institutions serve as reliable areas for information access and transfer;
- (e) Ensuring that Higher Educational Institutions and Research and Development Institutions have access to reliable and secure networks;
- (f) Making public data open, freely available, and downloadable in digestible formats for ready analysis;
- (g) Building a National Data Center (“NDC”) with a reliable and robust infrastructure and data management system;
- (h) Encouraging government agencies, research institutions, and top universities, to maintain their own data centers linked with the NDC;
- (i) Working with private institutions to link public and private datasets that will allow for integrated data search;
- (j) Promoting and encouraging data analysis across all functions of businesses, industries, and government agencies;

(k) Promoting projects that would enable access to more sensitive datasets given clear social or business value; and

(l) Undertaking extensive and up-to-date training of analysts and data scientists to extract actionable insights from publicly available data.

Section 12. *Workforce Development.* - The State shall transform education and nurture future A.I. talents as well as upskill or reskill workers by:

(a) Promoting data literacy for all;

(b) Ensuring the proper training of teachers in Data Science and Analytics;

(c) Developing graduate programs centered on data science and A.I.;

(d) Increasing the number of graduate students in data science, A.I., and business analytics;

(e) Promoting lifelong learning and design learning pathways for out-of-school individuals;

(f) Incorporating data science and analytics, including data visualization and storytelling, as general education courses in universities and colleges;

(g) Working with technology companies to provide sufficient computing resources and equipment to students and teachers;

(h) Incentivizing industries to offer learning and development programs that improve digital/data literacy;

(i) Developing sector-specific curricula and/or stackable programs with varying degrees of specialization (low, medium, high);

(j) Identifying industry-specific tools needed to help upskill the country's workforce;

(k) Incentivizing industries to send employees for graduate studies that focus on research and development towards developing a scientific culture within organizations; and

(l) Identifying jobs that are vulnerable to automation and other industry technologies and map the skills that need upgrading or retooling.

Section 13. Termination and Unemployment Benefits; Job Displacement Program. - In case a public or private employee is terminated due to the installation or implementation of artificial intelligence technologies or systems, rendering his or her position redundant, the worker affected shall be entitled to separation pay equivalent to at least his or her one (1) month pay or to at least one (1) month pay for every year of service, whichever is higher. A fraction of at least six (6) months shall be considered one (1) whole year. This is without prejudice to any higher benefit as may be provided by any existing law, rule, agreement, practice, or regulation.

The worker shall also be eligible for any unemployment benefits from the Social Security System or the Government Service Insurance System.

The Department of Labor and Employment shall create a Job Displacement Program that will aim to immediately assist and re-employ any workers involuntarily terminated due to the installation or implementation of artificial intelligence technologies or systems. The NCAIR shall always strive to improve the skills, education, and knowledge of employees in sectors that are prone to A.I. replacement to protect them from any prolonged displacement.

CHAPTER V FINAL PROVISIONS

Section 14. Appropriations. - The amount necessary for the initial implementation of this Act shall be sourced from the current appropriations of the Departments part of the NCAIR. Thereafter, such sums as may be necessary for the continued implementation of this Act shall be included in the annual General Appropriations Act.

Section 15. Implementing Rules and Regulations. - The National Innovation Council shall issue within sixty (60) days from the effectivity of this Act the necessary rules and regulations for the effective implementation of this Act.

Section 16. Repealing Clause. - All laws, executive orders, proclamations, rules, regulations and other issuances or parts thereof which are inconsistent with the provisions of this Act are hereby repealed, amended, or modified accordingly.

Section 17. Separability Clause. - If any part or provision of this Act is held unconstitutional or invalid, other parts or provisions thereof which are not affected shall continue to remain in full force and effect.

Section 18. Effectivity. - This Act shall take effect fifteen (15) days following completion of its publication in at least two (2) newspapers of general circulation.

Approved,