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Artificial Intelligence, Data and Competition – Note by Peru

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www.oecd.org/competition/artificial-intelligence-data-and-competition.htm

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1. Introduction

1. Latin American countries are experimenting a deep technology transformation, encouraged mainly by the adoption of Artificial Intelligence (AI) tools in the business field. Recent reports show a strong growth on the adoption of AI tools in business models, reaching 71% in 2023².

2. For the case of Peru, adoption level reached 28% in business models according to the most recent Global AI Adoption Index, mainly motivated by the need of reducing costs and of automatize key processes. Sectors leading AI adoption are retail (29%), media (27%), financial services (24), agriculture and fishing (21%).

3. Additionally, even when AI adoption is still conservative in Peru, there is potential to promote its growth. Peru is between the countries where most of the population considers that AI brings more benefits than inconveniences (70%)³.

4. A stronger adoption of AI tools in the country could bring significant economic contributions. Estimates made by the IDB show that the Peruvian GDP would duplicate by 2030 and productivity index would triplicate⁴. This potential has been acknowledged by public authorities and recent legislation has been given to promote AI use (Law N° 31814 “Law that promotes the use of artificial intelligence in favor of the social and economic development of the country”⁵).

5. As AI tools permeate gradually on economic activities with tangible benefits, it also brings potential and real challenges on how its adoption could follow ethical standards and guarantee transparency, privacy, and security. Additionally, it brings several concerns about the competition dynamics along the chain value of AI services as well as concerns about how firms could align the use of AI tools with the compliance of competition law.

6. The challenges described in terms of competition policy must force competition agencies to keep track of the competition dynamics of AI provision services as well as how firms are using AI tools to interact with competitors, consumers, and providers. This implies the assignment of resources to strengthen the capacity of competition agencies to get a deep understanding of an industry that evolves at a continuous pace.

7. This contribution describes the state of AI adoption in Latin American countries with emphasis in the Peruvian experience. It also discusses the recent and expected developments of the AI provision industry as well as the challenges to the Peruvian

¹ Contribution of the INDECOPI.

² The report by NTT Data and MIT Technology Review (2023), shows that the adoption of AI tools jumped from 51% in 2020 to 71% in 2023.

³ AI Index Report (2023).

⁴ Iglesias, García, Gabarró and Benzaqué (2020). “Inteligencia artificial: Gran oportunidad del siglo XXI: Documento de reflexión y propuesta de actuación.” International Development Bank. To access the study, see: <https://publications.iadb.org/es/inteligencia-artificial-gran-oportunidad-del-siglo-xxi-documento-de-reflexion-y-propuesta-de>

⁵ Published on June 13th, 2023.

competition agency to keep track of these changes and of their impact on the competition dynamic of economic sectors that adopt AI. Finally, we provide concluding remarks.

2. On the adoption of AI in Latin American countries and the Peruvian experience

8. In the last years, artificial intelligence has evolved from a technological trend to be an essential topic of public debate. AI tools are permeating different aspects of economic activities. Companies in Latin America are adopting AI tools as a key component of their business models and strategies. As expected, companies are expanding their initial exploration to arrive to concrete applications to improve productivity.

9. The most recent report by NTT Data and MIT Technology Review shows that adoption of AI tools by companies in Latin American countries reached 71%. Additionally, there was not a single company that could state that AI tools wouldn't have impact in their business. Accordingly, the report shows that companies are expecting to invest more in AI tools in the coming years. In fact, around 60% of Latin American companies adopted AI in the last 3 years. This confirms a quick process of adoption in the last years and a revolution that is changing several business models. It also confirms that expectations are increasing regarding the potential gains in efficiency, productivity and competitiveness.

10. AI use is heterogeneous. The use of AI tools into the business model is a gradual process with different lengths between stages and companies. The stage of exploration implies that some resources are being dedicated to exploring AI solutions and to do some preliminary research, but no AI solution has been implemented yet. The stage of production implies the adoption of AI solutions, but on a minor scale. The stage of advanced implementation results from the use of AI solution to a big scale, with positive and tangible results within a company. Finally, there is stage of market leadership when a company is a market leader in the use and adoption of AI solution and has achieved an important competitive advantage in the market thanks to AI solutions and has the capability to create product and services based on AI tools.

11. In 2023, 39% of Latin American companies were at the stage of exploration of AI solutions, 30% at the stage of production, 15% at the stage of advanced implementation, 6% were market leaders, while the remaining 10% didn't show any experience with the adoption of AI solutions (half of this last group is willing to start the use of AI solution next year).

12. The preferences of Latin American companies for AI services providers are as follows: Microsoft Azure ML has a relative leadership (21%). Providers as Amazon Web Services (16%), Open AI (15%) and Google Cloud Platform (14%) also have a relevant place. This reflects their capacity to provide robust AI solutions, scalable and, usually, integrated with a range of complementary services.

13. Regarding the state of AI adoption in Peruvian companies, this is still moderate, reaching 28% in the last Global AI Adoption Index (compared to an average of 42% for Latin American countries, where Brazil (41%), Mexico (31) and Chile (30%) are leading active adoption of AI solutions). Retail activities (29%), media (27%), financial services (24%), agriculture and fishing (21%) are the economic sectors with higher levels of AI adoption in the country.

14. Cloud computing market in Peru is led by Amazon Web Services (30%), Microsoft Azure ML (21%), and Google Cloud (10%). Other providers of cloud services

in the country are Huawei Cloud (8%) and Oracle Cloud (5%). Remaining providers account for 26% of the Peruvian market⁶.

15. Additionally, a recent study about the influence and perspectives of AI in marketing strategies of big companies in Peru (Datum, 2023) shows that 55% of the most important companies in Peru have incorporated generative AI as a tool. For example, in their commercial operations, using bots for customer attention. Also, these companies are using Machine Learning and predictive AI to configure advertising guidelines. However, generative AI is still being used in a personal way and not as a stage of regular procedures of these companies. In fact, around 53% of these big companies are in a stage of experimentation, while 32% is still investigating about the use of AI tools, 13% have already adopted AI in a regular basis and just 2% shows mastery of the AI tools.

16. Regarding the providers of generative IA solutions, ChatGPT is the main platform used by marketing teams (91%). Additional platforms that are being used are Bard (29%), Midjourney (22%) and Dall-E (11%).

17. About the benefits of the use of AI solution on marketing strategies for big companies in Peru, the following are mentioned: time saving (81%), productivity increase (73%), focus on strategic and creative tasks (45%), search of specialized information (42%), avoid repetitive operative tasks (40%), and errors reduction (29%). Consequently, Big Data analysis and design would be the main marketing areas benefited using AI.

18. Adoption of AI solutions implies different challenges that companies need to face. These challenges are related to (i) ethical implications, (ii) property rights, (iii) competition (risk of using same generated solutions), (iv) veracity (some platforms don't show the sources of the required information).

19. Finally, public authorities have acknowledged the potential of the use of AI solutions to foster socioeconomic development. The Law N° 31814 "Law that promotes the use of artificial intelligence in favor of social and economic development of the country", enacted in June 2023, established the following principles for the use and development of AI: (a) security standards based on risk analysis, (b) focus on the plurality of participants, (c) internet governance, (d) digital society, (e) ethical development to a responsible AI, and (f) privacy of AI.

3. On the recent trends and the perspectives of adoption of AI

20. As mentioned before, AI adoption in Latin American countries is increasing vigorously in recent years. Even when AI adoption is still conservative in some countries, as Peru, there is a strong potential to promote its growth in different economic sectors. For instance, Peru shows a solid perception about the benefits of AI use. In fact, around 70% of the population considers that AI use brings more benefits than inconveniences (AI Index Report, 2023).

21. The main identified trends regarding AI adoption in Latin American countries are: (i) use and validation of AI solutions results, (ii) efficiency and productivity as the main goals of companies using AI, (iii) companies are facing challenges related with the lack of specialized talent in their AI adoption, (iv) companies are looking for strategic partners in academia, research firms, startups and regulators, (v) AI implementation is taking place in case by case basis, principally by academic institutions and some leader companies, (vi)

⁶ For more information about the cloud computing market in Peru, see <https://www.statista.com/outlook/tmo/public-cloud/peru>

customer service/support is becoming the favorite area to introduce AI by companies, (vii) companies are investing in improving data quality for its use in AI solutions, (viii) companies are taking the initiative regarding privacy, cybersecurity and transparency consideration before regulation is being developed, (ix) last year, generative AI had a huge impact on creativity, automatization and personalization⁷.

22. Some of the recent trends are going to remain relevant. For example, AI solutions applied to marketing are expected to tend to hyper personalization (Datum 2023). Peruvian companies show consensus about the fact that they expect to create products and services to make life easier to their clients using AI solutions. To achieve that, getting to know better their clients is going to be a key aspect as well as getting a better understanding of the tools that AI offers.

23. In the path to personalization, generic AI solutions are going to remain important for companies. In Latin America, 25% of companies value and adopts AI solution made by third parties. This AI solutions offer advantages as a quick implementation and proved efficacy, make them more attractive to companies that don't have resources for personalization.

4. Challenges for competition policy

24. Competition dynamics in AI sector is generating several concerns around the world. Competition agencies in developed countries have been conducting recent inquiries about it and the main conclusion is that the segments of the AI hardware supply chain are highly concentrated. This includes the segments of chip design, the chip fabrication, and the operation of data centers⁸.

25. Additionally, competition agencies in developed countries have initiated or concluded studies about the cloud computing market, exploring the competition dynamics, concentration, and its downstream effects on the economy⁹. This market shows high levels of concentration. In fact, around two thirds of world cloud computing market is concentrated in three companies: Amazon Web Services (around 31% of the market), Microsoft Azure (around 24%) and Google Cloud (around 11%)¹⁰.

26. As shown, concentration levels for cloud computing market in Latin America, and specifically, for Peru, follow the world trend; with three companies (Amazon Web Services, Microsoft Azure, and Google Cloud) concentrating 50% of the Latin American market, and the same three companies concentrating more than 60% of the Peruvian cloud computing market.

27. Also, as mentioned before, the adoption of AI solutions is still conservative in Peru, but it is increasing, and the perspectives are favorable for a stronger adoption in the near future. So, as has been recommended by the studies conducted by competition agencies in

⁷ NTT Data and MIT Technology Review (2023).

⁸ Vipra and Myers West (2023) "Computation Power and AI". AI Now Institute.

⁹ These studies include the ones made by the US Federal Trade Commission, the report on AI Foundation Models by the UK's Competition and Market Authority, the market study on cloud services being conducted by the UK's Ofcom, and agencies exploring competition concerns in cloud services includes The Netherlands, Japan, and France.

¹⁰ Synergy Research Group (2024). For more details, see: <https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers/>

developed countries, it is important a continuous monitoring of the competition dynamics of the AI industry. Merger enforcement to prevent further market concentration and the investigation of anticompetitive conduct are crucial to face any threat to competition.

28. The application of competition policy measures in the AI industry requires a deep understanding of all segments of its chain value, and knowledge about how companies are using AI solutions in their business models. Consequently, INDECOPI needs to strengthen its capabilities and to attract specialized human capital to keep track of the industry development and their implications on the competition dynamics. Additionally, INDECOPI needs to strengthen its capabilities to investigate and tackling anticompetitive conduct related to the use of AI solutions by companies in their business models.

29. Recent initiatives are being implemented by INDECOPI regarding the monitoring of the use of AI tools by companies (for consumer defense policy purposes)¹¹. So, the institution is aware of the risks related to the use of AI tools. As for competition policy, it's necessary to have more resources to attract specialized human talent and to strengthen capabilities to face any threat to competition in the AI industry.

5. Concluding remarks

30. Latin American countries are experimenting a deep technology transformation, encouraged mainly by the adoption of Artificial Intelligence (AI) tools in the business field. Recent reports show a strong growth on the adoption of AI tools in business models.

31. Even when AI adoption is still conservative in Peru, there is potential to promote its growth. Recent legislation has been given to promote the use of artificial intelligence in favor of the social and economic development of the country.

32. Competition dynamics in AI sector is generating several concerns around the world. Mainly because of the high level of concentration in the segments of the AI hardware supply chain.

33. Concentration levels for cloud computing market in Latin America, and specifically, for Peru, follow the world trend. Three companies (Amazon Web Services, Microsoft Azure, and Google Cloud) lead the market in Peru and in Latin American countries.

34. Competition policy in the AI industry requires a deep understanding of all segments of its chain value, and how companies are using AI solutions in their business models. Consequently, INDECOPI needs to strengthen its capabilities and attract specialized human capital to keep track of industry developments and their implications for competition dynamics. Additionally, INDECOPI needs to strengthen its capabilities to investigate and tackle anticompetitive conduct related to the use of AI solutions by companies in their business models.

¹¹ For example, INDECOPI has been monitoring webpages to identify the use of dark patterns (deceptive design patterns that could be possibly generated using AI tools). Additionally, INDECOPI is investigating possible applications of AI tools to improve procedures to retire unsafe products present on the market.