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The Impact of Artificial Intelligence on Small Businesses Update

By Nathan Bolan

In the months since the initial briefing on artificial intelligence (AI) and small business, a lot has changed. It seems that each day there is another leading headline or bill introduced on the floor of Congress that seeks to make sense of the uses for these technologies. This briefing update will look at the bills specifically mentioned in that original report and provide updates as necessary to certain figures used. A small portion will introduce another method of AI that can be useful for small businesses, in addition to the chatbots you are all well-versed in.

As an extension of the “Financial Support for Artificial Intelligence Implementation” section on page 11 of the original briefing, it may also be important to consider the effects of the COVID-19 pandemic on the prosperity of small businesses. While many suffered too great a financial burden to stay open, it was not until a 2022 report in the Small Business Economics entrepreneurship journal that the rate of permanent closures could accurately be assessed (Fairlie et al., 2022). Understanding these statistics may be important to advancing legislation that ensures small business survival during other national and international tragedies. It might also be wise to consider how incentivization through small business use of AI can be expanded or substituted for other methods to account for similar situations to the pandemic.

The 2022 report uses business filing sales taxes from the California Department of Tax and Fee Administration. When accounting for the time trend and seasonal effects, there was a 2.7 percentage point increase in business closures during 2020Q2, or April, May, and June of 2020 (Fairlie et al., 2022). Note that permanent closures are defined in this report as four consecutive quarters of inactive business. The closure rate in 2019Q2 rose from 3.7% to 6.7% in 2020. In the same year, a quarter earlier, the jump was from 4.8 to 6.5% (Fairlie et al., 2022).

What AI implementations like those described in the original brief and for a section of this update can do for small businesses in relation to the pandemic is accelerate their building back. For businesses that permanently have closed, as the data above has shown,

the combined effect of incentives for the use of AI and the benefits of its implementation on business operations has the potential to help their revitalization.

In addition to the April 2023 Meta announcement on plans to spend \$33 billion on AI capacity expansion, organization founder, chairman, and CEO Mark Zuckerberg said that 2024 would see the greatest investments in artificial intelligence and that “AI will be our biggest investment area” (Vanian, 2024).

But in addition to large language models (LLMs), there are other forms of AI and complementary technologies that large corporations like Microsoft and Alphabet, Google’s parent company, use. Especially in its application for small businesses, Google’s BigQuery, BigQuery GIS, ArcGIS, and Earth Engine are technologies helping with geospatial analysis (Google Cloud, 2024). Depending on the type of company, these technologies are key to analyz[ing] . . . the demographics of its customers and identify[ing] the best locations for new stores” (Geoapify, 2023). QueryGIS and Earth Engine are Google-specific products, but they are often used alongside other applications in the above as more cost-effective methods of geospatial analysis that are more accessible to small businesses and larger corporations alike. These technologies themselves are not artificial intelligence but are instead completenetary. This is something Google purposefully geared their most recent GIS technologies to.

In short, GIS tools and Google’s BigQuery system provide small businesses with over 50 petabytes and 900 datasets of information, with 1 petabyte added every month and 100 datasets every year, at a sustainable price that can be further analyzed through the use of AI (Google Cloud, 2024). As Meta and other companies continue to increase spending on implementation and expansion of their capacity, these kinds of technologies will become increasingly important to the functioning of small businesses.

The final portions of this update will focus on specific bills mentioned in the original brief and explain what has come of them. It will also update national progress to develop AI research plans. H.R.6580 – Algorithmic Accountability Act of 2022, sponsored by Rep. Yvette D. Clarke [D-NY-9] from the House Committee on Energy and Commerce, has only since been referred to the Subcommittee on Consumer Protection and Commerce in February, 2022, but has yet to make headway beyond that (Clarke, 2022). S.4201 - Ditigal Platform Commission Act of 2022, sponsored by Sen. Michael F. Bennet [D-CO] from the Senate Committee on Commerce, Science, and Transportation, has only since been read twice and referred to this same committee in May, 2022 (Bennet, 2022).

A May 2023 update by the Select Committee on Artificial Intelligence of the National Science and Technology Council seeks to expand the scope of the National Artificial Intelligence Research and Development Strategic Plan (The White House, 2023). The plan takes text from the 2016 and 2019 national AI R&D strategic plans and is based on agency and administration evaluations of the 2019 update to the National AI R&D Strategic Plan. Community responses were also included in the 2023 update. The key addition to the newest report is Strategy 9 on establishing a coordinated approach to international collaboration on research on AI technologies, gauging the benefits and risks of the ever-changing tool.

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