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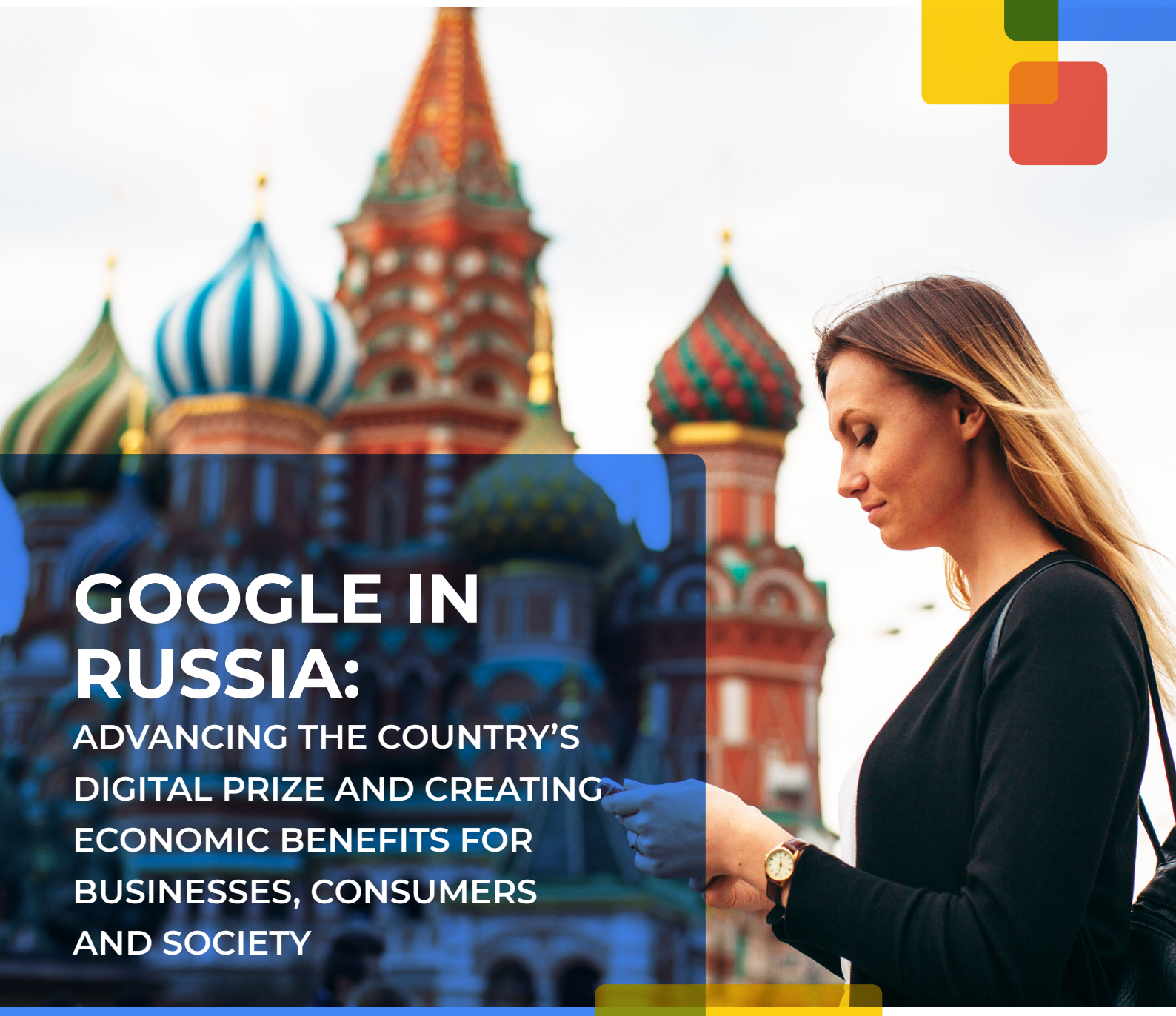

GOOGLE IN RUSSIA:

ADVANCING THE COUNTRY'S DIGITAL PRIZE AND CREATING ECONOMIC BENEFITS FOR BUSINESSES, CONSUMERS AND SOCIETY

2021

Prepared by AlphaBeta for Google

Important Notice on Contents – Estimations and Reporting

This report has been prepared by AlphaBeta for Google. All information in this report is derived or estimated by AlphaBeta analysis using both non-Google proprietary and publicly available information. Google has not supplied any additional data, nor does it endorse any estimates made in the report. Where information has been obtained from third party sources and proprietary research, this is clearly referenced in the footnotes. The amounts in this report are estimated in both Russian Ruble (RUB) and United States dollars (USD). The conversion is based on the average exchange rate between March 2020 and March 2021, sourced from OFX's historical database of daily exchange rates, which was 1 USD = 74.34 RUB.

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About AlphaBeta

AlphaBeta is a strategy and economic advisory business serving clients across Asia and globally. We work with the public sector, corporations, NGOs, not-for-profits and investors to identify opportunities and develop strategies to grow, improve service delivery, support economic prosperity and generate tangible impact.

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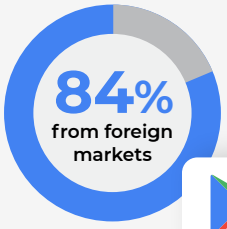
Google's products and programs bring significant benefits to Russia

BOOSTING BUSINESS REVENUES

In 2021, Google's products[1] and BusinessClass program are estimated to bring RUB1.02 trillion (USD13.7 billion) worth of revenue gains to businesses in Russia



Google Play

Google Play is estimated to provide Russian mobile developers **RUB66.9 billion (USD900 million)** worth of revenue in 2021, 84% of which comes from foreign markets

Google's advertising tools such as **Google Search & Ads, AdSense and YouTube** are estimated to generate

RUB614.5 billion (USD8.3 billion)

worth of business benefits in 2021

Google Search Google Adsense

Google's flagship skills program for entrepreneurs and businesses, **BusinessClass**, jointly created with Sberbank, is estimated to contribute

RUB336 billion (USD4.5 billion)

annually in 2021

Business Class

IMPROVING THE DAILY LIVES OF CONSUMERS

In 2021, Google's products[2] are estimated to bring RUB1.2 trillion (USD16.6 billion) worth of benefits to consumers in Russia

Google Search

saves users 9.6 days (230 hours)

Google Search saves Internet users in Russia an average of 9.6 days over one year from online searches

> 30 hours on Google maps

Each driver in Russia who uses Google Maps is estimated to spend about 30 hours less on the roads in 2021

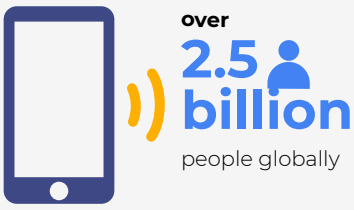
1. The economic benefits of the following products were sized for businesses: Google Search; Google Ads; Google AdSense; YouTube; and Google Play. These include the gross revenue, income and savings generated by businesses using Google products. In addition, revenue benefits from the BusinessClass program was also included.
2. The economic benefits of the following products were sized for consumers: Google Search; Google Maps; Google Play; YouTube; Google Drive, Google Photos; Google Docs; and Google Sheets. These include the consumer surplus value of Google products.

ACCELERATING DIGITAL TRANSFORMATION

Google's programs and initiatives in the country...

Nurture the local tech ecosystem

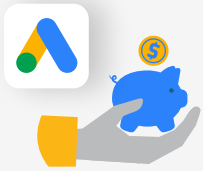
The Android operating system gives mobile app developers access to an audience of



over 2.5 billion people globally

Facilitate digital adoption among businesses

During the COVID-19 pandemic, Google provided **Google Ad Grants** to SMBs to enable them to conduct digital advertising for free

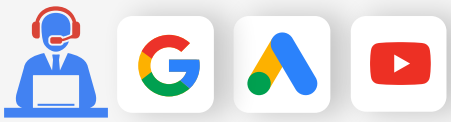


Develop the nation's digital skills

47%

of participants of Grow with Google and BusinessClass (jointly created with Sberbank) state that both programs positively contributed to their career development and business growth[3]

CREATING INTANGIBLE VALUE IN SOCIETY



During the COVID-19 pandemic, Google extended the use of its advertising platforms such as the Google Display Network, Google Search, Google AdSense and YouTube for broadcasting pandemic-related information to Russian authorities for free. Through these efforts, the Ministry of Health government portal attracted significant traffic of **50 million** visits within two months after its launch

YouTube is used to promote Russian culture and literature globally – it was used to broadcast readings of famous Russian literature in the **Google Readings** initiative, and was also used to showcase past performances from the **Bolshoi Theatre** online during the COVID-19 pandemic

3. For more information on the BusinessClass program, please see: https://www.business-class.pro/

EXECUTIVE SUMMARY

Digital technologies have a growing role to play in spurring future productivity in Russia. While the Russian government places an increasing focus on digital transformation in all segments of the economy and society, private-sector interventions are also crucial for this to happen. Google, in particular, has been making significant contributions in this regard. Its products, ranging from its ubiquitous search engine, Google Search, to its popular YouTube platform and BusinessClass program are estimated to create total economic benefits of RUB1.02 trillion (USD13.7 billion) for Russian businesses and RUB1.2 trillion (USD16.6 billion) for Russian consumers in 2021. This report aims to shed some light on these benefits, and illustrate the contributions of Google's programs and initiatives in accelerating the country's digital transformation journey.

This report finds that Google is making significant contributions in Russia through both its products and programs in the country. Though it is best known as a search engine, Google delivers economic benefits through its suite of products and services for businesses, consumers and society in the country, and has also been responsible for a range of programs and initiatives aimed at accelerating Russia's digital transformation journey. In 2021, the economic benefits created by its products and BusinessClass are estimated to be worth RUB1.02 trillion (USD13.7 billion) for businesses and RUB1.2 trillion (USD16.6 billion) for consumers in Russia. Its programs and initiatives in the country have also been instrumental to accelerating digital transformation efforts in Russia.

The key findings of this report include:

01

Google's products and BusinessClass program create significant benefits for businesses, consumers and society in Russia. In 2021, these benefits are estimated as RUB1.02 trillion (USD13.7 billion) for businesses, and RUB1.2 trillion (USD16.6 billion) for consumers. These products also create intangible value in the wider society, including the local creative and arts community, and in disseminating critical information to the general public during crises.

In 2021, businesses in Russia are estimated to gain total economic benefits from Google's products and BusinessClass program worth RUB1.02 trillion (USD13.7 billion).[1] To put this into perspective, this is a significant value which is equivalent to about 30 percent of the annual GDP contribution from Russia's education sector in 2020.[2] This value comprises revenue gains earned by Russian businesses from using Google products and its BusinessClass program. These revenue gains are derived in three key ways. First, businesses are able to improve their revenue through better customer outreach, as a result of using Google's digital advertising tools such as Google Ads, Google AdSense and YouTube advertising tools. Second, Google platforms such as Google Play and YouTube, which command large global audiences, enable Russian businesses to gain access to international markets. With over 2 billion YouTube logged-in users and 1 billion active users on Google Play globally,[3] Russian app developers and video creators are able to benefit from access to global markets. For example, thanks to Google Play Russian developers earn 84 percent of their revenues from overseas. Thirdly, thanks to the joint skills program from Google and Sberbank, BusinessClass, which targets Russian small- and medium-sized businesses (SMBs) and aspiring business owners, the turnover of trained and new SMBs is estimated to be RUB336 billion (USD4.5 billion) revenue per year. The program has also generated about 87,000 new jobs. Exhibit A1 shows a breakdown of these business benefits. In addition to revenue gains, Google's search engine (Google Search) and productivity tools such as Google Drive and Workspace help businesses increase their operational productivity and save time. By providing almost instantaneous access to information online, Google Search saves the average employee in Russia 17 minutes a day, allowing them to focus on other tasks – this is equivalent to 4.3 full days over a year.[4] The Google products and programs analyzed to derive the total business benefit of RUB1.02 trillion include Google Search; Google Ads; Google AdSense; YouTube; Google Play; and BusinessClass. This estimate is conservative as it does not include the benefits created by the Android operating system, such as cost savings and revenue improvements for Android device manufacturers and app developers.

1. The economic benefits of the following products were sized for businesses: Google Search; Google Ads; Google AdSense; YouTube; and Google Play. These were estimated based on AlphaBeta analysis. See Appendix for details on the methodology. In addition, revenue benefits from the BusinessClass program was also included.
2. The business benefits supported by Google include the gross revenue generated by businesses using Google products. It is important to note that these values are not GDP contributions or economic value-add, as the objective is to size the direct economic benefits to businesses. Here, they have been benchmarked against industry sector GDP contributions in 2020 to illustrate the magnitude of these benefits.GDP data source: Federal State Statistics Service. National Accounts. Available at: https://rosstat.gov.ru/accounts
3. Sources include: YouTube (2021), YouTube for Press Available at: https://blog.youtube/press/' Venture Beat (2015), "Android passes 1.4B active devices as Google Play passes 1B active users." Available at: https://venturebeat.com/2015/09/29/android-passes-1-4b-active-devices-google-play-passes-1b-active-users/
4. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513

In the same year, consumers in Russia are also estimated to gain RUB1.2 trillion (USD16.6 billion) worth of economic benefits from Google's products.[5] This is also a large value which is equivalent to about half of the GDP contribution from Russia's information, communications and technology (ICT) sector in 2020.[6] Estimated using the "willingness to pay" principle,[7] this figure represents a measure of the perceived value and benefits of Google's products, which are typically provided free of charge to consumers. Exhibit A2 shows a breakdown of these consumer benefits. Google products bring greater convenience, improved access to information, and more avenues for entertainment and enrichment to consumers. Consumers experience greater convenience, for example, from Google Maps, which helps users optimize their driving and public transport trips, and aid them with navigation. Each driver in Russia who uses Google Maps for route planning and navigation is estimated to spend 30 hours less on the roads in 2021.[8]

Exhibit A1: **Google brings about an estimated RUB1.02 trillion worth of annual business benefits in the form of increased revenue**

Estimated business benefits from Google products and BusinessClass in Russia, 2021
Revenue gains (RUB, USD)

Google advertising tools (Google Search and Ads; Google AdSense; YouTube)
- Net advertising benefits for businesses which use these tools[1]
- Income generated by website publishers through AdSense
- Advertising income earned by YouTube video creators

Estimated annual benefits **RUB614.5 billion (USD8.3 billion)**

Google Play
- Revenues by app developers in Russia earned through Google Play from both domestic and foreign markets

Estimated annual benefits **RUB66.9 billion (USD900 million)**

Business Class program
- Net revenue benefits for businesses

Estimated annual benefits **RUB336 billion (USD4.5 billion)**

Total annual business benefits in Russia:
RUB1.02 trillion (USD13.7 billion)

1. Net advertising benefits refer to additional revenue earned from advertising less the advertising cost.
Note: Estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.

Source: AlphaBeta analysis. See Appendix for details on methodology.

Consumers also experience greater access to entertainment and enrichment through products such as YouTube and Google Play. The Google products analyzed to derive the total consumer benefit of RUB1.2 trillion include Google Search; Google Maps; YouTube; Google Play; Google Drive; Google Photos, Google Docs, and Google Sheets.

5. The economic benefits of the following products were sized for consumers: Google Search; Google Maps; Google Play; YouTube; Google Drive, Google Photos, Google Docs and Google Sheets. These were estimated based on AlphaBeta analysis. See Appendix for details on the methodology.
6. The consumer benefits supported by Google include the consumer surplus value of Google products. It is important to note that these values are not GDP contributions or economic value-add, as the objective is to size the direct value of these products to consumers. Here, they have been benchmarked against industry sector GDP contributions in 2020 to illustrate the magnitude of these benefits. GDP data source: Federal State Statistics Service. National Accounts. Available at: https://rosstat.gov.ru/accounts
7. This report adopts the economic "willingness to pay" principle to estimate the value of consumer benefits by asking individuals how much they value specific products – also known as consumer surplus - through a nationwide survey of Internet users. For further details on the methodology, please refer to the Appendix.
8. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513

Exhibit A2: **Consumers in Russia are estimated to gain total benefits worth RUB1.2 trillion (USD16.6 billion) in 2021 from Google's products**

Estimated consumer benefits from Google products in Russia, 2021
Consumer surplus (RUB, USD)

Ease of access to information **Google Search**

Annual consumer benefits
RUB218 billion (USD2.9 billion)

Entertainment and enrichment **Google Play; YouTube**

Annual consumer benefits
RUB762 billion (USD10.3 billion)

Increased productivity and convenience

Google Maps; Google Drive, Google Photos, Google Docs, and Google Sheets

Annual consumer benefits
RUB255 billion (USD3.4 billion)

Total annual consumer benefits:
RUB1.2 trillion (USD16.6 billion)

Note: Estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.
Source: AlphaBeta analysis. See Appendix for details on methodology.

Google's products provide intangible value to Russian society, including the local creative and arts community. Beyond their economic contributions to businesses and individuals, Google's products also deliver intangible benefits to the wider society, including nonprofit organizations and the local creative and arts community, and in disseminating critical information to the general public during crises. A key example of these intangible benefits is the use of Google's products and services to promote the official information from the Russian Ministry of Health, the consumer watchdog, Rospotrebnadzor, the Government stopcoronavirus.rf portal, WeAreTogether volunteering portal as well as the Moscow city Government during the COVID-19 pandemic. Google supported these agencies by prioritizing their public health messages across Google Search, Google Maps, G Pay and YouTube in multiple formats such as banners and alerts. In addition, Google also supports some of these agencies through its Ad Grants Crisis Relief Program and the YouTube COVID-19 Ads Inventory Program which allow government authorities to broadcast critical information to the general public by leveraging the Google Ads and YouTube advertising platform. In 2021, Google launched a special alert feature in Google Search and an information panel on YouTube to support Russia's COVID-19 vaccination efforts. These new features direct users to the dedicated COVID-19 vaccination page on the stopcoronavirus.rf portal so as to raise public awareness about the available vaccine options and on how to receive vaccinations. In April 2020, as the pandemic forced Russians to stay at home to curb the virus outbreak, Google launched the #AtHomeTogether project on YouTube which featured videos with tips on remote working and how to spend time at home effectively, which attracted 1 million subscribers. As part of this effort, two videos featuring the most popular YouTube bloggers and musicians in Russia received over 34 million views. YouTube has also been used to promote Russian arts and culture globally. YouTube, for instance, was used to broadcast live readings of famous Russian literature during the annual Google Readings initiative. It was also used to showcase past performances from the famous Bolshoi Theatre to online audiences during the COVID-19 pandemic. Through the Google for Nonprofits program, Google provided Google Ad Grants for nonprofit organizations to conduct digital advertising for free, as well as free access to Google's products to improve their internal collaboration processes, such as Google Workspace.

02

Google also supports Russia in accelerating its digital transformation journey through its products and initiatives. Past research by AlphaBeta (in collaboration with Google) has estimated that digital technologies can create an economic impact worth RUB38.7 trillion (USD521 billion) of annual economic value by 2030.[9] The government has also been playing a key role in pursuing digital transformation through its National Projects plan, a national development program that was realigned in 2020 to support Russia's post-COVID-19 recovery. The program prioritizes growing the digital economy as one of its 13 national projects,[10] where Google has been instrumental in supporting this digital transformation in three ways: nurturing the local technology ecosystem, facilitating digital adoption among businesses, and developing the nation's digital skills.

Nurturing the local technology ecosystem. Through its products and initiatives, Google has been instrumental to catalyzing tech activities and innovations in Russia, with a particular focus on supporting the developer and start-up communities. For the developer community, Google's Android operating system has been key to enabling innovations by mobile app developers. As a free-to-use, open-source operating system for mobile devices, Android allows app developers to view and use Android's source codes to create mobile applications that are compatible across all Android devices.[11] This eliminates the need for app developers to program different versions of their app for different Android devices and allows them to save on development time and focus on innovating and improving their apps. Moreover, app developers can reach more than 2.5 billion people globally by leveraging Android and Google Play store.[12] Google has also taken a lead in fostering collaborations within Russia's developer community through its Google Developer initiatives. These include Google Developer Groups, where Google connects with local developers and technologists from diverse backgrounds, shares knowledge of Google development tools with them, organizes training sessions and workshops on developer skills, and arranges industry conferences to promote collaboration within the community.[13] For the start-up community, the company provides mentorship services through its Google Growth Lab accelerator program, and helps promising mobile games development companies expand into international markets through the Game Drive initiative organized in collaboration with Mail.ru Group.

Facilitating digital adoption among businesses. Google facilitates digital adoption among businesses through programs that have promoted the use of their digital advertising and productivity tools. Google Ads, Google AdSense and YouTube advertising allow businesses to conduct better customer outreach through targeted advertising, bringing their products and services to the right audiences. During the COVID-19 pandemic, Google provided Russian SMBs with Google Ad Grants, which enabled them to use Google's search advertising tool (Google Search and Google Ads) for free.[14] This was critical given the need to connect with customers virtually amid constraints on in-person interactions during the pandemic. Google also collaborated with the city of Moscow to host online webinars to teach participants to utilize Google Drive, its online collaboration and document editing tool, to enable organizations to work remotely. [15]

Developing the nation's digital skills. Google also has a range of programs to support digital skills development in Russia. A key program is the Grow with Google initiative, a global Google initiative adapted to the skill needs of the local market. Launched in November 2020 and supported by the Ministry of the Economic Development of Russia, this initiative provides free online courses in digital skills such as web development and digital marketing.[16] Google also takes a lead in equipping women in tech with the skills and resources they need to become tech presenters and speakers through its Women Developer Academy program.[17] Under the broad digital skills-focused Grow with Google initiative, the Google for Women program in Russia aims to equip aspiring female entrepreneurs and content creators with the digital skills to open their own business, do programming, build a successful career, start their own YouTube channel, or succeed in something else.[18] In 2021, a separate webpage for women was added to the Grow with Google website in Russia, with a collection of training courses for personal and professional growth developed specifically for women. As part of this program, the social organization ToDoGood pioneered an initiative, in partnership with leading Russian universities and with the support of a grant from Google.org (Google's non-profit charitable arm), to help women access in-demand digital professions through free training and educational programs for over 2,500 women.[19] In 2020, the company, in partnership with the NAFI think tank , conducted a first-of-its-kind research on gender stereotypes and their impacts for the Russian economy and the society, and was awarded the prestigious UN-supported EQUALS in Tech Prize 2020.[20] In addition, Google conducts "I am Remarkable" training, which teaches students, especially women, to share their achievements - both at work and in other areas of life. Furthermore, Google's Teach from Home initiative, supported by the Ministry of Education, the company equips educators with the know-how to utilize digital tools to conduct remote learning using the suite of tools under Google Workspace for Education.[21] Finally, the company's flagship skill-building program in Russia, BusinessClass, also imparts business skills (including artificial intelligence or AI skills) to individuals who aspire to be business-owners and SMBs for free.[22]

9. AlphaBeta (2020), *The Digital Sprinters: How to unlock a $3.4 trillion opportunity*. Available at: https://alphabeta.com/wp-content/uploads/2020/11/201113_fa-main-report-gem-pages-os.pdf
10. Sources include: Foy, H. (2020), "Putin delays $360bn spendling plan as COVID-19 batters economy." Financial Times. Available at: https://www.ft.com/content/e18fde15-4fe9-4cda-943b-706353e4b4cc; The Moscow Times (2020), "Russia Resets Ambitious National Development Plan." Available at: https://www.themoscowtimes.com/2020/07/13/russia-resets-ambitious-national-development-plan-a70857; National Projects (2021), Government of Russia. Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects
11. Android is an open-source operating system for mobile devices and a corresponding open source project led by Google. As an open-source project, Android is a full, production-quality operating system for consumer products, complete with customizable source code that can be ported to nearly any device and with public documentation of its code that is available to everyone. By being open-source, Android is able to reduce the possibility of any central points of failure within its ecosystem that could be caused by stakeholders who restrict or control the innovations of any other player. From Android (2021), "About the Android Open Source Project." Available at: https://source.android.com/
12. Based on third-party data sources reflecting 3.6 billion estimated smartphone users globally and Android's 71 percent market share in the mobile operating system market. Sources include: Newzoo (2020), "43% of active smartphones will be 5G-ready by 2023". Available at: https://newzoo.com/insights/articles/mobile-game-market-2020-smartphone-users-game-revenues-5g-ready-engagement/; StatCounter (2021), "Mobile operating system market share worldwide". Available at: https://gs.statcounter.com/os-market-share/mobile/worldwide
13. Sources include: Google (2021), "GDG Moscow." Available at: https://gdg.community.dev/gdg-moscow/; Google (2021), "GDG St. Petersburg." Available at: https://gdg.community.dev/gdg-st-petersburg/
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15. MyCareer, Moscow (2020), "Webinar "Google Drive. Lesson 1: Experience"." Available at: https://mycareer.moscow/#/meetings/detail/3343
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17. Google Developers Blog (2021), "Women Developer Academy Program," Habr. Available at: https://habr.com/ru/company/google/blog/545184/
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21. Google (2020), Teach From Home. Available at: https://teachfromanywhere.google/intl/ru/
22. Sberbank (2019), "Sberbank and Google announce the launch of two new courses for Business Class national program." Available at: https://www.sberbank.ru/en/press_center/all/article?newsID=e6564d08-5cc0-4ef0-b485-e08151703cb2&blockID=1539&regionID=77&lang=en&type=NEWS

Advancing Russia's digital prize

If leveraged fully, digital transformation can create an impact in Russia of up to...

RUB 38.7 trillion
(USD 521 billion)
in annual economic value[1] by 2030

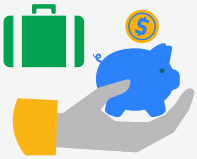
To advance Russia's efforts in digital transformation, the government has focused its policies on three areas:

01 Nurturing the local technology ecosystem

Examples of initiatives by the Russian government :

Creation of **regulatory sandbox** environments, where businesses can propose exemptions from regulations that impeded their digital innovations

02 Facilitating digital adoption among businesses



Grants to **subsidize the cost of technology adoption and implementation** for businesses

03 Developing the nation's digital skills

Plans to **subsidize digital skills courses** for around 200,000 Russians

1. Economic value refers to GDP increments, productivity gains, cost savings, time savings, increased revenues, increased wages and increased tax collection. Source: AlphaBeta (2020), *The Digital Sprinters*.

01
CHAPTER

Advancing Russia's digital prize

Past research by AlphaBeta (in collaboration with Google) has estimated that for Russia, digital technologies could create an economic impact worth RUB38.7 trillion (USD521 billion) of annual economic value by 2030. This value includes productivity gains, revenue boosts, cost savings, and GDP increments that could materialize if digital technologies such as the mobile Internet, Artificial Intelligence (AI), the Internet of Things (IoT), and cloud computing were to be fully adopted by businesses, consumers, and the government in Russia. This “digital prize” is projected to be distributed across a range of sectors, with top beneficiaries including the resources, infrastructure, and manufacturing sectors. With the COVID-19 pandemic causing significant economic impact globally and in Russia, such technologies could potentially be important for Russia to stay economically resilient in the post-pandemic future. Achieving digital transformation in Russia is also high on the government’s agenda, and constitutes a key element in the country’s National Projects plan. This plan reflects a strong focus on three key areas: nurturing the local technology ecosystem, facilitating digital adoption among businesses, and developing the nation’s digital skills.

1.1 Russia's RUB38.7-trillion "digital prize" in 2030

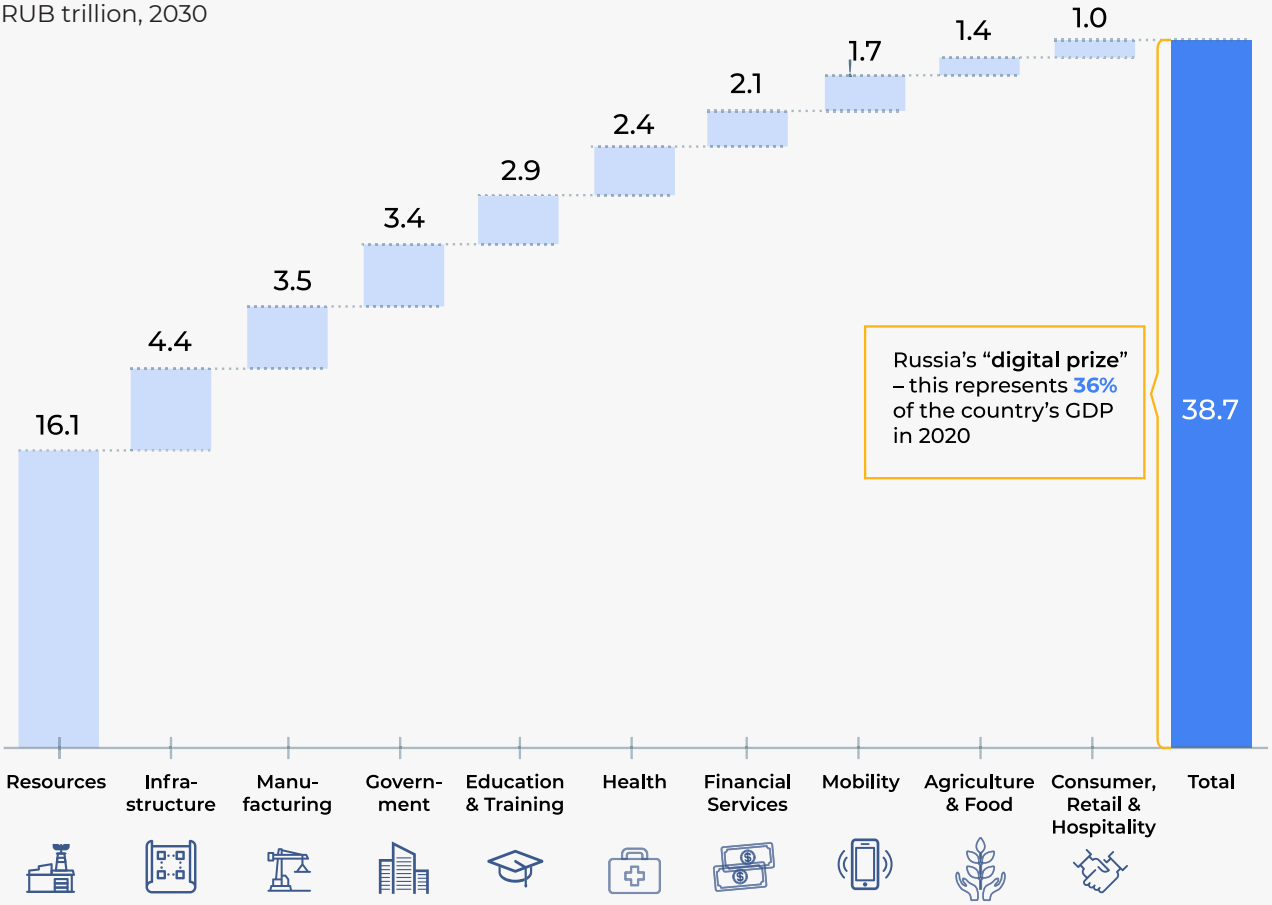
Digital technologies can unlock significant economic value in Russia. Past research by AlphaBeta (in collaboration with Google) has shown that by generating productivity gains, revenue boosts, cost savings, and GDP increments, digital technologies can unlock up to RUB38.7 trillion (USD521 billion) worth of annual economic value in the country by 2030.[23] This "digital prize" is a substantial value that is equivalent to 36 percent of the country's GDP in 2020 (Exhibit 1). This value was sized based on eight key technologies that were assessed to hold transformative potential for emerging economies globally – see Box 1 for an overview of these technologies. 39 technology applications, each mapping to one of the eight technologies, were then identified across ten industry sectors, and assessed for their potential economic contribution to Russia under a scenario of full adoption in 2030.[24]

Exhibit 1

Past research shows that digital technologies could support up to RUB38.7 trillion (USD521 billion) of annual economic impact in Russia by 2030

Potential annual economic value from digital technologies, by sector[1]

RUB trillion, 2030



1. These estimates do not represent GDP or market size (revenue), but rather economic impact, including GDP increments, productivity gains, cost savings, time savings, increased revenues, increased wages and increased tax collection. In this analysis, 39 technology applications were considered, and the economic value that each provides was estimated under the full adoption scenario, i.e., the scenario that 100% of businesses in the sector adopt the application.

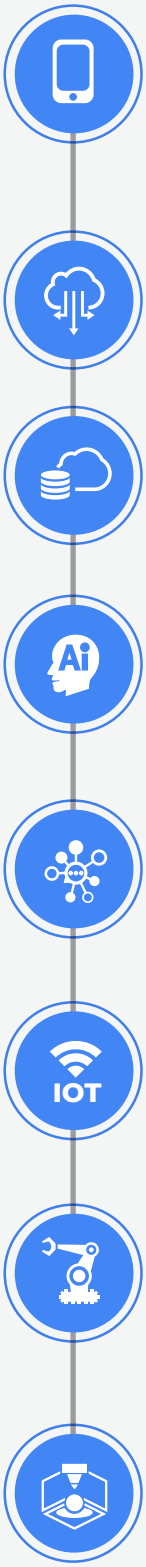
Sources: AlphaBeta (2020), The Digital Sprinters. Russia's 2020 GDP estimate was derived from the IMF's World Economic Outlook Dataset (Oct 2020).

NOTE: For details of the methodology used to size this figure, please refer to the Appendix section of The Digital Sprinters report.

23. AlphaBeta (2020), *The Digital Sprinters: How to unlock a $3.4 trillion opportunity*. Available at: https://alphabeta.com/wp-content/uploads/2020/11/201113_fa-main-report-gem-pages-os.pdf
24. For details of the 39 technology applications sized, please see: AlphaBeta (2020), *The Digital Sprinters: How to unlock a $3.4 trillion opportunity*. Available at: https://alphabeta.com/wp-content/uploads/2020/11/201113_fa-main-report-gem-pages-os.pdf

Box 1. Eight technologies with transformative potential for Russia

Eight key technologies that hold transformative potential for the economy were identified to size Russia's "digital prize" in past research by AlphaBeta (in collaboration with Google).[25] These include:



Mobile Internet. Mobile Internet has already driven the adoption of new business models such as the app economy, over-the-top (OTT) services and mobile-commerce (or "m-commerce"), and will continue to propel novel Internet-enabled applications in a range of sectors such the use of mobile telehealth applications in the healthcare sector, and the use of smartphone-based government e-services.

Cloud computing. Referring to the delivery of information technology (IT) resources over the Internet, cloud computing technologies allow individuals and entities to access technology services such as enhanced computing power, data storage and management tools on an as-needed basis.

Big data. Big data and related analytics, refers to the ability to analyze extremely large volumes of data, extract insights and act on them – often in or close to real-time. Predictive analytics can help workers and businesses analyze customer preferences more effectively to increase customer satisfaction.

Artificial Intelligence (AI). AI refers to the ability of software or hardware to exhibit human-like intelligence. This entails a set of technologies that enable computers to perceive, learn, reason and assist in decision-making to solve problems in ways that are similar to what people do.[26] Examples of AI applications include virtual assistants, autonomous vehicles and speech recognition tools.

Financial technology (Fintech). Sometimes referred to as Digital Financial Services (DFS), fintech has been instrumental in boosting the financial services sector through facilitating deposits and payments and providing individuals with access to more advanced financial products such as loans, savings, and investments.

Internet of Things (IoT) and remote sensing. IoT systems relate to the network of physical objects ("things") that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the Internet. These systems can monitor and manage the performance of the connected objects and machines.[27]

Advanced robotics. Compared with conventional robots, advanced robots have superior perception, integrability, adaptability, and mobility.[28] These improvements permit faster setup, reconfiguration, as well as more efficient and stable operations. For instance, in the manufacturing sector, advanced robotics can increase the productivity and flexibility of production processes, and enable producers to rapidly adjust to changing customer needs.

Additive manufacturing. This relates to technologies that build three-dimensional (3D) objects by adding layer upon layer of material. There is a range of potential benefits, such as the ability to handle complex, low-volume components where rapid turnaround is critical.[29]

As shown in Exhibit 1, Russia's "digital prize" is projected to be distributed across a range of industry sectors. In particular, the resources, infrastructure, and manufacturing sectors are projected to be the largest beneficiaries of digital transformation. The key opportunities for these sectors include:

- **Resources.** Digital technology applications relevant for mining and resource companies include advanced robotics and IoT solutions which can reduce machinery downtime and improve worker safety. Mining companies can leverage robotic technologies to run machinery autonomously, putting workers at less risk and increasing productivity. For example, SUEK, one of Russia's largest coal energy companies, is piloting a 5G-enabled intelligent mining system to automate its dump trucks.[30] Developed by Zyfra, a Finnish-Russian digital solutions provider, this system utilizes unmanned, robotic haul trucks mounted with high-resolution cameras that provide real-time information to allow the remote control of these trucks during mining operations. This system is expected to reduce downtime in haul trucks, and boost productivity by 30 percent.[31]

- **Infrastructure.** Construction and real estate companies can also tap on digital technologies such as Building Information Management (BIM) and predictive maintenance to promote seamless collaboration between engineers, planners and construction companies across all stages of project development. One example is Wainbridge, an international real estate developer, which designed and built the SOHO+NOHO residential building in Moscow.[32] The company leveraged a cloud-based documentation software from PlanRadar, an Austrian digital solutions provider, to allow for contractors and vendors to keep track of development at each stage of the construction process and to instantaneously share reports on faults and errors for quick intervention.[33]

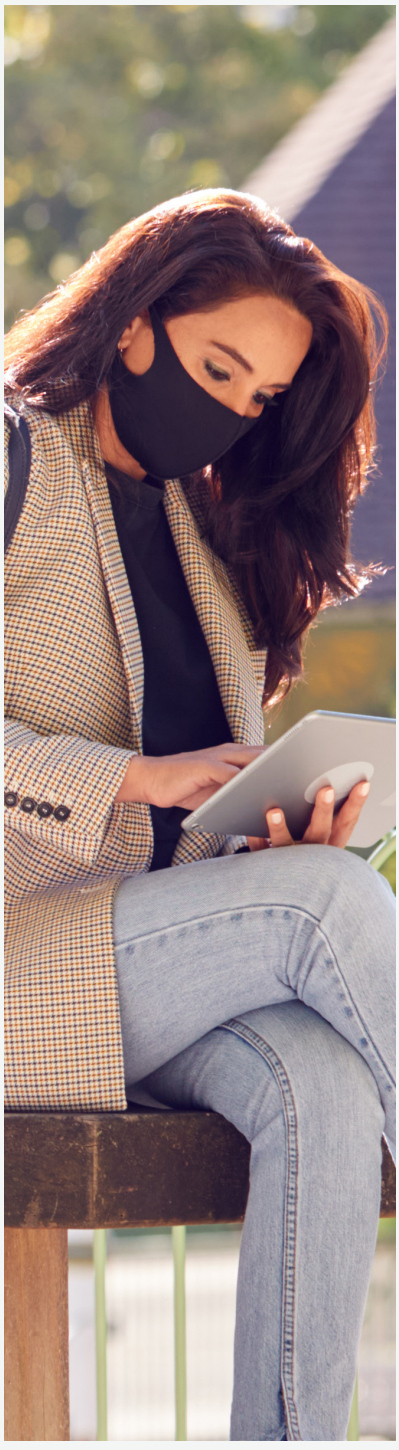
- **Manufacturing.** Manufacturing companies can leverage technology applications such as big data analytics, additive manufacturing, supply chain management, and advanced robotics to increase productivity and improve cost-efficiency. By improving production techniques, the use of big data analytics can bring about cost savings for manufacturers. For example, the iron and steel company, Magnitogorsk Iron and Steel Works, integrated machine learning and big data analytics into its steel manufacturing processes to improve the quality of its output.[34] The company also processed its historical steel-making data to predict the optimal combination of ferroalloys needed to produce specific grades of steel, allowing it to reduce material use by an average of 5 percent.[35]

With the COVID-19 pandemic impacting economies both globally and in Russia, digital transformation will be crucial for Russia to build economic resilience in the post-pandemic era. The pandemic has impacted Russia's economy, causing it to suffer its worst GDP contraction since 2009 of around three percent in 2020, and its worst unemployment rate since 2012 at around 5.9 percent in 2020.[36] It is also likely to bring about some long-term shifts in its economy. These include impacts on the sustainability of small- and medium-sized enterprises (SMEs), international tourism, and the e-commerce industry. Digital technologies can help address challenges in all of these areas (see Box 2 for more details).

25. AlphaBeta (2020), *The Digital Sprinters: How to unlock a $3.4 trillion opportunity*. Available at: https://alphabeta.com/wp-content/uploads/2020/11/201113_fa-main-report-gem-pages-os.pdf
26. Microsoft (2018), *The future computed*. Available at: https://blogs.microsoft.com/wp-content/uploads/2018/02/The-Future-Computed_2.8.18.pdf
27. MGI (2019), *The rise of Digital Challengers – How digitisation can become the next growth engine for central and eastern Europe*. Available at: https://digitalchallengers.mckinsey.com/files/McKinsey%20CEE%20report_The%20Rise%20of%20Digital%20Challengers.pdf
28. Boston Consulting Group (2019), *Advanced robotics in the factory of the future*. Available at: https://www.bcg.com/publications/2019/advanced-robotics-factory-future
29. Sharp, N. (2019), "Is additive manufacturing the right choice for your electronic assembly?" *JJS Manufacturing* Blog. Available at: https://blog.jjsmanufacturing.com/additive-manufacturing-electronic-assembly
30. International Mining (2020), "*Russia starts using 5G network on autonomous mining dump trucks.*" Available at: https://im-mining.com/2020/06/26/russia-starts-using-5g-network-autonomous-mining-dump-trucks/
31. International Mining (2020), "*Russia starts using 5G network on autonomous mining dump trucks.*" Available at: https://im-mining.com/2020/06/26/russia-starts-using-5g-network-autonomous-mining-dump-trucks/
32. PlanRadar (2020), "*How international real estate developer Wainbridge benefits from PlanRadar.*" Available at: https://www.youtube.com/watch?v=Zkc9aLfLWYo
33. PlanRadar (2020), Features. Available at: https://www.planradar.com/features/
34. InsideBigData (2016), "*Magnitogorsk Iron and Steel Works to Save Over £3 million Annually with Data Analytics.*" Available at: https://insidebigdata.com/2016/07/21/magnitogorsk-iron-and-steel-works-to-save-over-3-million-annually-with-data-analytics/
35. InsideBigData (2016), "*Magnitogorsk Iron and Steel Works to Save Over £3 million Annually with Data Analytics.*" Available at: https://insidebigdata.com/2016/07/21/magnitogorsk-iron-and-steel-works-to-save-over-3-million-annually-with-data-analytics/
36. Sources include: IMF (2021), Russian Federation Country Data. Available at: https://www.imf.org/en/Countries/RUS#countrydata; Reuters (2021), "*CORRECTED-UPDATE 2-Russia's unemployment rate at 5.9% in 2020, says labour minister.*" Available at: https://www.reuters.com/article/russia-unemployment-rate-idINL1N2K3130; Economist Intelligence Unit (2021), "Russian economy shows its resilience to shocks." Available at: https://www.eiu.com/n/russia-economic-growth/

Box 2. Leveraging digital technologies to manage the long-term implications of the COVID-19 pandemic in Russia

Further technology adoption will be crucial for businesses and workers in Russia to manage the potential long-term implications of "black swan" events like the COVID-19 pandemic. This box outlines how digital technologies can help Russia manage three likely long-term implications of the COVID-19 pandemic:



Disruption to small- and medium-sized enterprises (SMEs). The pandemic has led to many SMEs in Russia facing decreased cash flows and increased retrenchment of workers, with a recent survey showing that 70 percent of small-sized firms (or firms with five to 20 employees) and 77 percent of medium-sized firms (or firms with 21 to 99 employees) in the country experiencing decreased demand during the pandemic, as opposed to 45 percent of large firms reporting the same.[37] Digital technologies can offer solutions that allow SMEs to remain resilient during the crisis. These include cross-border e-commerce and online delivery platforms which SMEs can leverage to access global markets and maintain their sales and fulfil operations even during the pandemic. Technologies which facilitate customer interactions, transactions, and marketing both domestically and globally can allow SMEs to widen their customer reach and reap larger revenues over the long term.

Severe impact on tourism. While pandemic restrictions have brought travel nearly to a standstill and forced many tourism-dependent businesses to close,[38] digital technology applications can help the tourism sector to tide over the crisis. For example, big data analytics can boost the domestic tourism sector by providing travel companies with data-driven insights on the travel preferences of domestic tourists while virtual reality (VR) and augmented reality (AR) technologies open up a new space of "remote tourism" for virtual explorations.[39] In essence, digital technologies provide opportunities to capture new consumer segments, offering tourism businesses new ways to innovate and stay relevant.

Permanent shifts in the e-commerce industry. As government-enforced pandemic restrictions led citizens to stay indoors[40], consumers in Russia looked toward e-commerce sites to satisfy their consumption. This contributed to 40 percent growth in online sales revenue between 2019 to 2020 in Russia, with forecasts predicting the market to grow 10 to 15 percent annually over the next five years.[41] E-commerce firms and merchants can capitalize on digital technologies to ride this growth. For example, mobile wallets help to facilitate contactless payments while IoT technologies keep track of inventories and supply chain movements, minimizing disruptions and costs from delayed shipments by providing real-time updates of logistics developments.

37. The World Bank (2020), "*Facing the Storm: COVID-19's Impact on Russia's Private Sector in 10 Graphs.*" Available at: https://blogs.worldbank.org/developmenttalk/facing-storm-covid-19s-impact-russias-private-sector-10-graphs
38. Association of Tour Operators of Russia (2020), "*ATOR: The situation in the tourism market is unprecedented, urgent measure are needed.*" Available at: https://www.atorus.ru/news/press-centre/new/50716.html
39. ICT Moscow (2020), "*Technologies in tourism and culture: prospects of the platforms and the impact of COVID-19.*" Available at: https://ict.moscow/en/news/museum-tech/
40. Rudnitsky, J and Meyer, H. (2020), Bloomberg. "Russia moves toward nationwide lockdown as virus spreads." Available at: https://www.bloomberg.com/news/articles/2020-03-29/moscow-orders-residents-to-stay-home-as-coronavirus-spreads
41. Reuters (2020), "*COVID-19 crisis: a shot in the arm for Russian e-commerce.*" Available at: https://www.reuters.com/article/us-russia-ecommerce-focus-idUSKBN27Z10Z

1.2 Government policy agenda for digital transformation

Achieving digital transformation in Russia is also high on the government's agenda, and constitutes an important element in the country's National Projects plan – the country's key economic development plan designed to boost national incomes and accelerate economic growth.[42] The program prioritizes growing the digital economy as one of its 13 national projects, where Google has been instrumental in supporting this digital transformation in three ways: facilitating digital adoption among businesses, developing the nation's digital skills, and nurturing the local technology ecosystem (Exhibit 2).

Exhibit 2

Achieving digital transformation is high on the government's agenda, and the "National Projects" plan reflects focus in three key areas

Nurturing the local technology ecosystem	Facilitating digital adoption among businesses	Developing the nation's digital skills
• Investing in digital infrastructure	• Subsidizing the costs of developing and adopting digital solutions borne by businesses	• Equipping the current workforce with digital skills
• Relaxing regulations to facilitate digital innovation	• Creation of a national digital platform to facilitate digital adoption by businesses	• Preparing the next generation of workers for the digital economy

Source: Government of The Russian Federation; Ministry of Digital Development, Communications and Mass Media; AlphaBeta analysis

42. Sources include: Foy, H. (2020), "Putin delays $360bn spendling plan as COVID-19 batters economy." Financial Times. Available at: https://www.ft.com/content/e18fde15-4fe9-4cda-943b-706353e4b4cc; The Moscow Times (2020), "Russia Resets Ambitious National Development Plan." Available at: https://www.themoscowtimes.com/2020/07/13/russia-resets-ambitious-national-development-plan-a70857; National Projects (2021), Government of Russia. Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects
43. Government of the Russian Federation (2020), "The government will allocate one billion rubles to provide schools with modern educational content." Available at: http://government.ru/news/41151/
44. Sources include: National Projects, Russia (2020), "Digital educational environment." Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects/obrazovanie/umnaya_shkola; Ministry of Education, Russia (2020), Information on the functioning of the general education system. Available at: https://opendata.edu.gov.ru/opendata/7710539135-OO
45. Government of the Russian Federation (2020), "The government will allocate one billion rubles to provide schools with modern educational content." Available at: http://government.ru/news/41151/
46. Sources include: Ministry of Education, Russia (2020), "Vladimir Putin answered questions related to education at an annual press conference with the participation of federal and foreign media." Available at: https://edu.gov.ru/press/3256/vladimir-putin-otvetil-na-voprosy-svyazannye-s-obrazovaniem-na-ezhegodnoy-press-konferencii-s-uchastiem-federalnyh-i-zarubezhnyh-smi/; National Projects, Russia (2020), "Information infrastructure." Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects/tsifrovaya-ekonomika/p-informatsionnaya-infrastruktura-p

Below is an overview of some key initiatives in each area:

- **Nurturing the local technology ecosystem**. To facilitate digital transformation, the government has created measures to nurture Russia's technology ecosystem. One key measure focuses on investment in digital infrastructure to encourage the take-up of digital technologies. For example, the Russian government is intending to equip all schools with high-speed Internet.[43] With around 15,000 schools in Russia already equipped with high-speed Internet (broad bandwidth connection) as of early 2021, the government hopes to extend this to all remaining schools by the end of the year.[44] It will then leverage the expanded Internet access to encourage the use of digital content for education, allocating RUB1 billion (USD14 million) from government funds to digitize educational materials to aid students.[45] In addition, the government also intends to invest RUB12.6 billion (USD169 million) to develop IT infrastructure in rural and remote locations to provide access to modern digital services, distance education, and telemedicine.[46] Another key measure is to relax regulations to facilitate digital innovation among businesses. One example is Federal Law No. 258-FZ, which will create "regulatory sandboxes" to accelerate the development of new technologies in drone transportation, autonomous cars, and even telemedicine applications.[47] This law, which came into effect in January 2021, allows businesses to propose legislative exemptions should they identify regulation that impedes the progress of their innovations. Such exemptions could last up to three years if approved.[48] Another example is Moscow's regulatory sandbox to promote the development of AI technologies, which was introduced in July 2020.[49] Intended to run from 2021 to 2025, this regulatory sandbox encourages industry to test and develop AI technologies within a relaxed regulatory environment. Participating companies are also provided access to city data that can be used to train the AI softwares.

- **Facilitating digital adoption among businesses.** A key policy focus has been to subsidize the costs of developing and adopting digital solutions borne by businesses.[50] To alleviate the implementation costs of companies that are digitizing their operations, the government has set aside around RUB7.1 billion (USD96 million) worth of grants to support these businesses. Eligible digital technologies include IoT and blockchain as well as digital technologies that can improve industrial production, while technologies that enable remote working can receive coverage of up to 80 percent of the development costs.[51] Another measure is the creation of a national digital platform to facilitate digital adoption by businesses. This is the "One Window" digital platform which provides companies access to digital government services and updates on the economy.[52] This initiative is expected to aggregate all relevant services and resources including training, financial, and regulatory advisory support onto a single platform.[53]

- **Developing the nation's digital skills.** A priority under the National Projects plan is to equip the current workforce with digital skills to ensure that they remain relevant and competitive. The government aims to subsidize digital skilling programs for around 200,000 Russians to give them the opportunity to learn new digital competencies.[54] The government also plans to run programs for around 50,000 civil servants to train them in facilitating digital transformation projects in their respective state and municipal administrations.[55] Another focus is to prepare the next generation of workers for the digital economy. To help educators in preparing educational material for teaching digital skills, college and university teachers will be given the opportunity to take up free training courses in topics related to digital technologies at the Innopolis University, Russia's top technological university.[56] Teachers will be able to learn how to apply digital technologies into their educational programs for their own specialized disciplines as well as cover topics on advanced digital technologies which include neurotech, robotics, virtual reality (VR), and augmented reality (AR).

47. Ministry of Economic Development, Russia (2020), "Experimental legal regimes." Available at: https://www.economy.gov.ru/material/directions/gosudarstvennoe_upravlenie/normativnoe_regulirovanie_cifrovoy_sredy/eksperimentalnye_pravovye_rezhimy/
48. CMS Law-Now (2020), "Russia introduces regulatory sandboxes for digital innovation." Available at: https://www.cms-lawnow.com/ealerts/2020/10/russia-introduces-regulatory-sandboxes-for-digital-innovation
49. ICT Moscow (2020), "AI regulatory sandbox." Available at: https://ict.moscow/en/projects/smartcitymoscow/case/experimental-legal-regime-in-the-field-of-ai/
50. Ministry of Digital Development, Communications and Mass Media of the Russian Federation (2020), "*The Ministry of Digital Development of the Russian Federation allocates 7.1 billion rubles for grants for IT projects.*" Available at: https://digital.gov.ru/ru/events/40094/
51. Ministry of Digital Development, Communications and Mass Media of the Russian Federation (2020), "*The Ministry of Digital Development of the Russian Federation allocates 7.1 billion rubles for grants for IT projects.*" Available at: https://digital.gov.ru/ru/events/40094
52. Government of the Russian Federation (2020), "Digital ecosystem "One window" *and new financial instruments will be the key innovations of the updated national project to support small and medium-sized businesses.*" Available at: http://government.ru/news/40458/
53. National Projects, Russia (2020), "*Creation of a digital ecosystem focused on user needs, including in-demand services, customer-oriented interface.*" Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects/msp/p-tsifrovaya-platforma-s-nbsp-mekhanizmom-adresnogo-podbora-mer-podderzhki-p
54. National Projects (Digital Economy) (2020), "*From 2021, personnel from the digital economy will be trained in a new way.*" Available at: https://digital.ac.gov.ru/news/5114/
55. National Projects, Russia (2020), "*Human resources for the digital economy.*" Available at: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/projects/tsifrovaya-ekonomika/p-kadry-dlya-tsifrovoy-ekonomiki-p
56. Government of the Russian Federation (2020), "*The government will finance advanced training in the field of IT for teachers of colleges and universities.*" Available at: http://government.ru/news/41150/

02
CHAPTER

Google's products and programs - boosting businesses, improving the lives of consumers, and creating intangible value in society

In support of Russia's digital transformation journey, Google's products and BusinessClass program (jointly created with Sberbank) create significant benefits for businesses, consumers, and society in Russia. In 2021, these benefits are estimated as RUB1.02 trillion (USD13.7 billion) for businesses,[57] and RUB1.2 trillion (USD16.6 billion) for consumers.[58] These products also create intangible value in the wider society, including the local creative and arts community, and in disseminating critical information to the general public during crises.

In addition, through a range of programs and initiatives in the country, Google has also been instrumental in supporting Russia's digital policy agenda and capturing Russia's "digital prize" (described in Chapter 1). The company provides support in this digital transformation in three ways, aligned with the National Projects focus on digital transformation: nurturing the local technology ecosystem, facilitating digital adoption among businesses, and developing the nation's digital skills. In nurturing the local technology ecosystem, Google has been instrumental to catalyzing tech activities and innovations in Russia, with a focus on supporting the developer and start-up communities. In facilitating digital adoption among businesses, Google's initiatives promote the use of their digital advertising and productivity tools, particularly during the COVID-19 pandemic. Finally, Google also has a range of programs and initiatives in developing Russia's digital skills.

57. The Google products analyzed to estimate business benefits include Google Search; Google Ads; Google AdSense; YouTube; and Google Play. This estimate is conservative as it does not include the benefits created by the Android operating system, such as cost savings and revenue improvements for Android device manufacturers and app developers. In addition, revenue benefits from the BusinessClass program was also included.
58. The Google products analyzed to estimate consumer benefits include Google Search; Google Maps; YouTube; Google Play; Google Drive; Google Photos, Google Docs, and Google Sheets

2.1 Benefits of Google's products to businesses, consumers and the wider society

Google's products bring about economic benefits to businesses, consumers and the Russian society. In 2021, businesses in Russia are estimated to gain total economic benefits from Google's products and BusinessClass program (jointly launched with Sberbank) worth RUB1.02 trillion (USD13.7 billion).[59] To put this into perspective, this is a significant value which is equivalent to about 30 percent of the annual GDP contribution from the education sector in Russia.[60] In the same year, consumers in Russia are also estimated to gain RUB1.2 trillion (USD16.6 billion) worth of economic benefits from Google's products.[61] This is also a large value which is equivalent to about half of the GDP contribution from Russia's information, communications, and technology (ICT) sector.[62]

It is important to note that the estimated business and consumer benefits relate to direct economic benefits received, and do not include the flow-on economic effects generated (see Box 3 for further details). Beyond their economic contributions to businesses and individuals, Google's products also deliver intangible benefits to the wider society, including the local creative and arts community, and in disseminating critical information to the general public during crises.

59. The economic benefits of the following products were sized for businesses: Google Search;Google Ads; Google AdSense; YouTube; and Google Play. These were estimated based on AlphaBeta analysis. In addition, revenue benefits from the BusinessClass program was also included. See Appendix for details on the methodology. This estimate is conservative as it does not include the benefits created by the Android operating system, such as cost savings and revenue improvements for Android device manufacturers and app developers.
60. The business benefits supported by Google include the gross revenue generated by businesses using Google products. It is important to note that these values are not GDP contributions or economic value-add, as the objective is to size the direct economic benefits to businesses. Here, they have been benchmarked against industry sector GDP contributions in 2020 to illustrate the magnitude of these benefits. GDP data source: Federal State Statistics Service. National Accounts. Available at: https://rosstat.gov.ru/accounts
61. The economic benefits of the following products were sized for consumers: Google Search; Google Maps; Google Play; YouTube; Google Drive, Google Photos, Google Docs and Google Sheets. These were estimated based on AlphaBeta analysis. See Appendix for details on the methodology.
62. The consumer benefits supported by Google include the consumer surplus value of Google products. It is important to note that these values are not GDP contributions or economic value-add, as the objective is to size the direct value of these products to consumers. Here, they have been benchmarked against industry sector GDP contributions in 2020 to illustrate the magnitude of these benefits. GDP data source: Federal State Statistics Service. National Accounts. Available at: https://rosstat.gov.ru/accounts

Box 3. Measuring the benefits of Google's products to businesses and consumers of the COVID-19 pandemic in Russia

The benefits of Google's products to businesses and consumers estimated in this research focus on the direct economic impact. As the nature of benefits differs by group, different approaches were utilized for businesses and consumers. The business benefits supported by Google include the gross revenue generated by businesses using Google products. It is important to note that these benefits do not include the flow-on economic effects generated, such as further purchases from their suppliers, or the economic activity generated by the employees of these businesses who spend their wages in the broader economy (indirect or induced spend). This is because the intention of this analysis is to gauge the direct impact of Google's products on business users.

On the other hand, for the benefits to consumers; it is important to note that these are challenging to measure and calculate because most Google products are free to use (such as Google Search, Google Maps, and YouTube). In the absence of price indicators, the economic principle of "willingness to pay" was used to estimate the value of consumer benefits by asking individuals how much they value specific products. This was used to derive the consumer surplus generated by Google's products, which relate to the value consumers experience from the products, expressed in monetary terms. In addition, time savings accrued to consumers from their use of Google Maps (which optimizes their driving and public transport journeys) and Google Search (which increases the efficiency of information gathering) were also measured to derive a measure of the convenience these products bring to them. Please see the Appendix for a detailed methodological explanation of how the benefits from each product were sized.

2.1.1 Benefits to businesses

GOOGLE HELPS BUSINESSES BOOST THEIR REVENUES

Google's products and BusinessClass program (jointly launched with Sberbank) help businesses boost their revenues. Exhibit 3 summarizes the estimated revenue gains experienced by Russian businesses from Google Search, Google Ads, Google AdSense, YouTube, Google Play, and the BusinessClass program.

Google's advertising tools such as Google Ads, Google AdSense and YouTube allow businesses to conduct better customer outreach through targeted advertising, bringing their products and services to the right audiences and growing their customer base. In addition, content creators such as video creators on YouTube and web publishers are able to earn incomes and revenues by hosting advertisements on their YouTube videos and websites respectively.

In 2021, Google's advertising tools, including Google Search and Ads, Google AdSense, and YouTube is estimated to generate RUB614.5 billion (USD8.3 billion) in the form of net returns[63] to businesses in Russia, as well as advertising income generated by website publishers (through Google AdSense) and video creators (through YouTube). Google Search and Ads allow businesses to place ads across Google's vast network of search results, with ads being shown to people actively searching online for relevant products and services. Beyond search advertising, Russian businesses also benefit from displaying advertisements on Google's network of publisher sites including websites, blogs, and forums through Google AdSense. In addition, by hosting advertisements on their websites, Google AdSense also generates revenue for web publishers. These include online journalists, media sites, bloggers, and writers. Similarly, advertisers and video content creators also earn revenue and incomes from YouTube advertisements.

Box 4 lists examples of how Russian businesses have benefited from advertising using Google's products.

Exhibit 3 **Google brings about an estimated RUB1.02 trillion worth of annual business benefits in the form of increased revenue**

Estimated business benefits from Google products and BusinessClass in Russia, 2021
Revenue gains (RUB, USD)

Google advertising tools (Google Search and Ads; Google AdSense; YouTube)
- Net advertising benefits for businesses which use these tools[1]
- Income generated by website publishers through AdSense
- Advertising income earned by YouTube video creators

Estimated annual benefits **RUB614.5 billion (USD8.3 billion)**

Google Play
- Revenues by app developers in Russia earned through Google Play from both domestic and foreign markets

Estimated annual benefits **RUB66.9 billion (USD900 million)**

Business Class program
- Net revenue benefits for businesses

Estimated annual benefits **RUB336 billion (USD4.5 billion)**

Total annual business benefits in Russia: **RUB1.02 trillion (USD13.7 billion)**

1. Net advertising benefits refer to additional revenue earned from advertising less the advertising cost.
Note: Estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.

Source: AlphaBeta analysis. See Appendix for details on methodology.

63. This refers to the increase in revenue that can be directly attributed to advertising, net of the relevant advertising expenditure.

Box 4. Google's digital advertising tools help Russian businesses gain new customer leads and boost sales

Gazprombank: Conducting a large-scale, digital marketing transformation

Google works with businesses in Russia to create effective digital marketing strategies that help attract more customers and build their digital brand.

One example is Gazprombank, one of Russia's largest consumer and corporate banks, which worked together with Google to improve its digital marketing strategy in order to increase its sales, boost customer loyalty, and attract more customers.[64] As part of the initiative called "Project 5A", Gazprombank and Google analyzed the bank's marketing operations and systematized how marketing projects were carried out in the company. The bank was encouraged to adopt the "5A" framework, which required Gazprombank to improve its remote online services in five aspects: audience, assets, activation, attribution, and automation.[65] Google also provided recommendations on the Google advertising tools that the bank could leverage. The result of the initiative was a 33 percent rise in consumer loan applications between September 2019 and May 2020, and a quadrupling of the number of deposit applications between October 2019 and July 2020.[66]

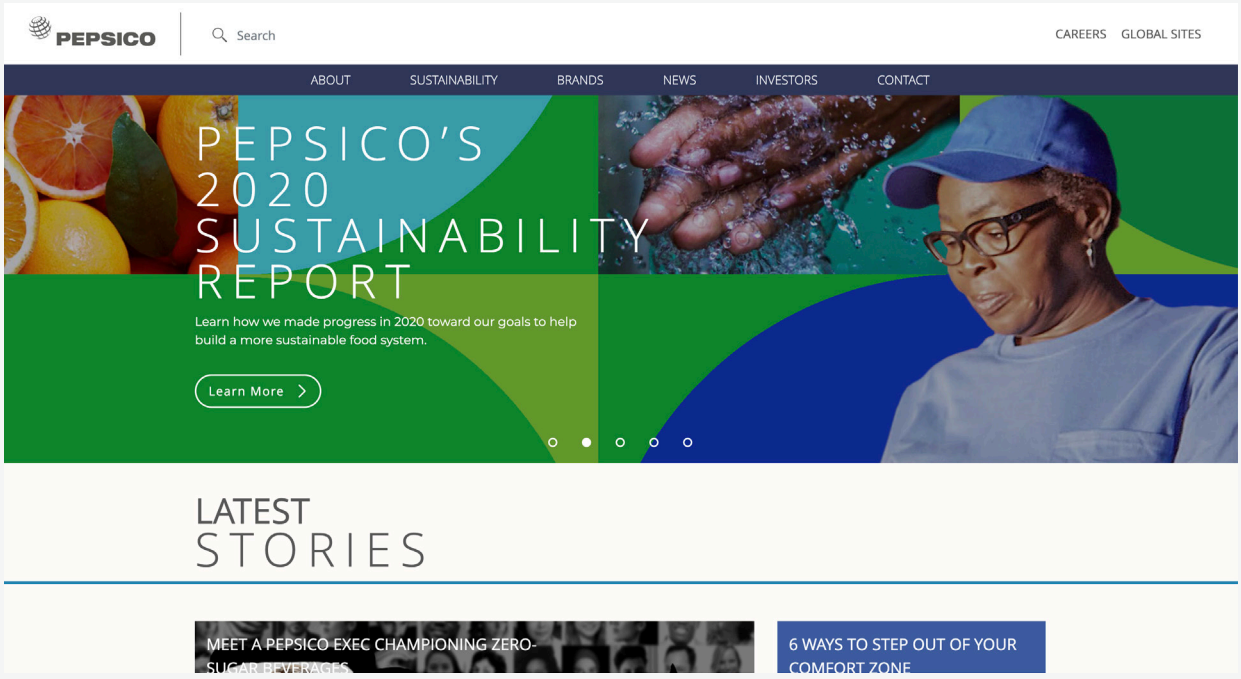
64. Kommersant (2020), "Digital marketing with a guarantee." Available at: https://www.kommersant.ru/doc/4426434?query=%D0%BF%D0%B0%D0%B2%D0%B5%D0%BB%20%D0%BF%D0%B0%D0%BA
65. Kommersant (2020), "Digital marketing with a guarantee." Available at: https://www.kommersant.ru/doc/4426434?query=%D0%BF%D0%B0%D0%B2%D0%B5%D0%BB%20%D0%BF%D0%B0%D0%BA
66. Kommersant (2020), "Digital marketing with a guarantee." Available at: https://www.kommersant.ru/doc/4426434?query=%D0%BF%D0%B0%D0%B2%D0%B5%D0%BB%20%D0%BF%D0%B0%D0%BA

DocDoc and PepsiCo: Gaining new customer leads through Google Ads and YouTube advertisements

By accessing Google's advertising platforms, many businesses in Russia can promote their goods and services and expand their customer base.

One example of a company that has successfully leveraged Google Ads to promote its services is DocDoc, a Russian telemedicine company. Offering multiple services by orthopedists, dermatologists, and immunologists, the company was looking for an effective and cost-efficient way of reaching out to multiple audience types.[67] To achieve this, DocDoc utilized Dynamic Search Ads, a machine learning-enabled feature of Google Ads that automatically updates advertisement content based on the user's search requests and visited websites. The result was an increase in the volume of conversions by 22 percent, i.e., the rate at which people clicked on DocDoc advertisements and went on to request for their services.[68]

Another example of a company that has benefited from Google's digital advertising services is PepsiCo. Upon launching a new product line from its Lays business unit, baked low fat chips, the company utilized YouTube's "TrueView for Reach" feature, which helps advertisers maximize the number of views of their YouTube advertisements.[69] This feature allowed PepsiCo to have a 17 to 31 percent increase in its advertisement recognition rate, i.e., the number of individuals who could recall and relate PepsiCo's advertisements to its product.[70]



67. Think with Google (2019), "DocDoc Performance Marketing: How Dynamic Search Ads Boost Conversions By 22%." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/search/performance_marketing_docdoc/
68. Think with Google (2019), "DocDoc Performance Marketing: How Dynamic Search Ads Boost Conversions By 22%." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/search/performance_marketing_docdoc/
69. YouTube's "TrueView for Reach" helps advertisers reach viewers on YouTube using skippable in-stream ads. Compared to campaigns that use skippable in-stream ads with cost-per-view (CPV) bidding, ads in "TrueView for Reach" campaigns are optimized to deliver greater reach at a lower cost using Target cost-per-impression (CPM) bidding. Advertisers are also able to measure the viewability of their YouTube ads using this feature. Source: Google Ads Help. Available at: https://support.google.com/google-ads/answer/10265362?hl=en#:~:text=TrueView%20for%20Reach%20helps%20you,cost%20using%20Target%20CPM%20bidding.
70. Think with Google (2019), "One Solution: How YouTube Ads Increased Visibility for Two PepsiCo Brands at a Reduced CPM." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/video/lays_agusha_pepsi_co_youtube_cases/

Hansa and Tiny Love: Boosting sales through Google Display Network and Google Ads

Russian companies also utilize Google's digital advertising tools to achieve increased brand awareness.

One example is Hansa, a Russian household appliance company. By leveraging Google Display Network to advertise its products on websites, the company could target its advertisements to specific consumer segments based on geography, age and other demographics.[71] Using Google Ads, the company was able to display advertising to Internet users who entered keywords on Google Search relating to "home and garden", "kitchen and dining room", and "home improvement." At first unsure of the efficacy of both Google Ads and Google Display Network, the company tested these tools on Internet users residing in the Volga and Ural districts in West Russia. The results were tremendous: by the end of the two-month campaign, retailers and distributors of Hansa's products indicated that sales increased by 133 and 109 percent in Ural and Volga respectively. This pilot's success led to the company scaling up its campaign nationwide.

In another example, Tiny Love, a company which develops toys for newborn babies, was able to promote its products to more first-time mothers and pregnant women using Google's digital advertising tools.[72] The company utilized YouTube to display advertisements on this platform, and Google Display Network to display banner advertisements on websites. Through the use of these platforms, Tiny Love managed to improve its brand awareness by 12 percent, and increase customers' buying intent by 19 percent.[73] Its banner advertisement campaign drew 28,700 online users to the company's website. The overall result was an 8.1 percent sales growth, year-on-year from mid-2018 to mid-2019.[74]

71. Think with Google (2020), "Test against test strife: how Hansa advertising on YouTube and KMS increased sales by 133%." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/video/hansa_youtube_advertising/
72. Think with Google (2020), "Tiny Love case: how to increase sales of educational toys for children." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/video/tiny-love/
73. Think with Google (2020), "Tiny Love case: how to increase sales of educational toys for children." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/video/tiny-love/
74. Think with Google (2020), "Tiny Love case: how to increase sales of educational toys for children." Available at: https://www.thinkwithgoogle.com/intl/ru-ru/marketing-strategies/video/tiny-love/

Google's digital product distribution system, Google Play, has also allowed Russian app developers to earn revenue from paid app downloads and in-app purchases by consumers. App developers in Russia are estimated to earn an annual revenue of about RUB66.9 billion (USD900 million) through Google Play in both the domestic and foreign markets.[75]

GOOGLE HELPS RUSSIAN BUSINESSES GAIN ACCESS TO INTERNATIONAL MARKETS

Due to the international reach of Google's products, content creators on Google's services and platforms can earn revenues from consumers of their content who reside overseas. In particular, YouTube and Google Play have allowed video creators and app developers in Russia to gain access to foreign audiences. With over 2 billion YouTube logged-in users and 1 billion active users on Google Play globally,[76] Russian video creators and app developers have been able to broaden their reach worldwide, and gain revenues based on the consumption of their content by overseas consumers. Of the total revenue earned by Russian app developers via Google Play globally (mentioned in the earlier section as RUB66.9 billion or USD900 million), about 84 percent (RUB56.2 billion or USD756 million) is derived from app downloads from audiences outside of Russia.

75. Google Play is a digital distribution service operated and developed by Google. It serves as an app store for the Android operating system, which refers to the mobile operating system developed by Google for touchscreen mobile devices such as smartphones and tablets. Google Play users are able to browse and download applications developed with the Android software development kit.
76. Sources include: YouTube (2021), YouTube for Press Available at: https://blog.youtube/press/' Venture Beat (2015), "Android passes 1.4B active devices as Google Play passes 1B active users." Available at: https://venturebeat.com/2015/09/29/android-passes-1-4b-active-devices-google-play-passes-1b-active-users/

GOOGLE HELPS BUSINESSES INCREASE PRODUCTIVITY AND SAVE TIME

Google helps businesses save time by improving the speed and ease of access to information and research. Google Search minimizes the time for businesses to acquire information by arranging and simplifying the vast array of content on the Internet. The ability to rapidly find relevant data and information provides tremendous productivity benefits for employees. It is estimated that on average, each employee in Russia who uses Google Search saves about 17 minutes per day in looking for work-related information, allowing them to focus on other tasks. This is equivalent to 4.3 days over one year (see Exhibit 7 in Section 2.1.2).

GOOGLE HELPS RUSSIAN BUSINESSES AND INDIVIDUALS GAIN NEW SKILLS AND SCALE THEIR VENTURES

Jointly launched with SberBank in April 2016, Google's BusinessClass program helps both aspiring and current business owners, as well as digital freelancers, gain the necessary skills relevant to grow and scale their ventures.[77]

The skills taught under the program include business-focused capabilities. For instance, launched in October 2020 in collaboration with the Agency for Strategic Initiatives and supported by the Russian Ministry of Education, "Becoming an Entrepreneur Z-Style Business" is an online course that teaches young entrepreneurs business fundamentals such as creating a start-up development strategy, and evaluating their business's potential.[78] As of April 2021, the BusinessClass program has trained over 166,000 individuals and businesses.

The impact of the BusinessClass program goes beyond skilling. Participants have gone on from the program to successfully develop new ventures, grow existing businesses, uplift their revenues, create new jobs, and contribute more to the country's

tax revenue.[79] As of April 2021, with 12 percent of participants who graduated from the program to become entrepreneurs, the BusinessClass program is estimated to have led to the creation of over 13,000 new business ventures. Since its inception in 2016, the program is also estimated to have created over 87,000 new jobs - which include jobs created by both new and existing businesses as a result of entering this program. With a significant number of new businesses being launched by participating entrepreneurs and number of SMBs which were able to increase their revenues due to the skills learnt from the program, BusinessClass is also estimated to be generating annual benefits worth RUB336 billion (USD4.5 billion) in 2021 as a result of revenues generated by these new and existing businesses. Such revenue increases also lead to contributions to the country's tax revenue, estimated to be about RUB60.5 billion (USD814 million) annually.

ANDROID HAS ALSO BROUGHT A RANGE OF ECONOMIC BENEFITS

Google's Android operating system has also brought a range of benefits to businesses, app developers and the broader economy (particularly in stimulating job creation). These are illustrated in detail in Box 5.

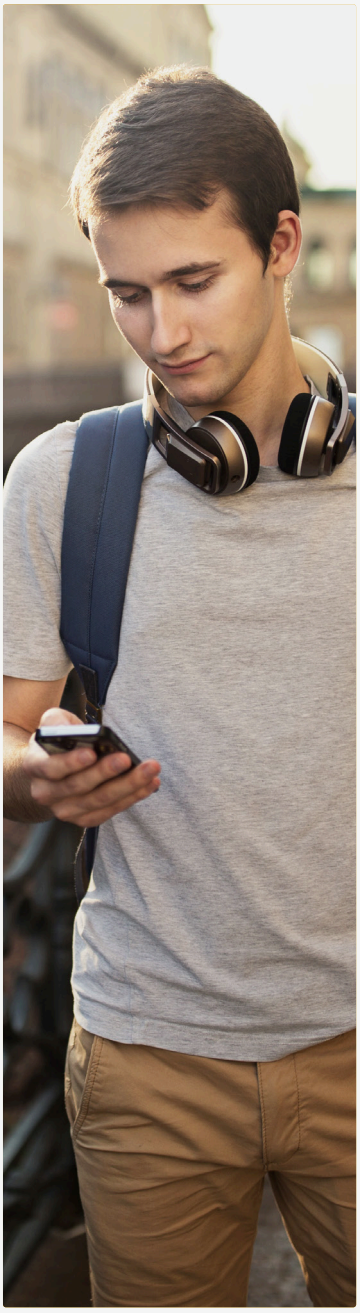
77. Sberbank (2016), "Sberbank and Google move "Business Class" to federal level." Available at: https://www.sberbank.ru/ru/press_center/all/article?newsID=6b4703fc-6837-43ed-9bd0-7c070dd27438&blockID=1539&regionID=77&lang=en
78. Marketscreener (2020), "Sberbank of Russia: Sber, Google. Agency for Strategic Initiatives launch training course for budding entrepreneurs." Available at: https://www.marketscreener.com/quote/stock/SBERBANK-6494829/news/Sberbank-of-Russia-nbsp-Sber-Google-Agency-for-Strategic-Initiatives-launch-training-course-for-31579430/
79. All estimates in this paragraph are based on the period of April 2016 (when BusinessClass program was launched) and April 2021. These estimates were derived from statistics provided by Google on the number of participants in the program, the breakdown of the types of participants, the proportion of SMBs that increased their revenue due to the program, as well as their average percentage increase in revenue, the proportion of SMBs that increased employment due to the program, as well as the average number of new employees they hired as a result, and the proportion of entrepreneurs who opened new businesses after graduating from the program

Box 5. Android's economic impact in Russia

Google's Android operating system enables the development of mobile technologies and applications through its open-source operating system, and contributes large economic benefits to businesses, app developers and also job creation in the wider economy.

Benefits to businesses

With a high penetration rate of 75 percent in Russia,[80] the Android mobile operating system has been responsible for much of the country's mobile applications economy, which in turn has driven increased efficiency and innovation in local businesses. A 2020 study of Russia's mobile ecosystem reflects that mobile applications have registered huge positive impacts for businesses in the country.[81] It found that 97 percent of Russian companies in traditional sectors such as finance, trade, transport, and logistics use mobile technologies such as mobile e-mail and mobile web-browsing software in their operations.[82] Moreover, 37 percent of companies in these industries associate positive changes to their businesses with the introduction of mobile technologies, with 34 percent of them stating that their labor productivity rose after the adoption of such technologies, and 30 percent indicating that their business processes had become more efficient. [83] The study also found that Russian SMBs on average use between four and five mobile technologies across various aspects of their businesses. [84]



Benefits to app developers

App developers also benefit from the open-source nature of the Android operating system, as well as its large global user base. As a free-to-use, open-source operating system for mobile devices, Android allows app developers to view and use Android's source codes to create mobile applications that are compatible across all Android devices.[85] This eliminates the need for app developers to program different versions of their app for different Android devices and allows them to save on development time and focus on innovating and improving their apps. Past AlphaBeta research also found that Android app developers can save up to 25 percent in development time from not having to port their apps across different operating systems because of this feature.[86] Moreover, app developers can reach more than 2.5 billion people globally by leveraging Android and Google Play store.[87] Russian app developers are also the most active users of the Android operating platform, with this group being one of the most frequent visitors of the developers.android.com page in 2020, the Android developer webpage which provides free resources for app developers.[88]

80. Statcounter, "Mobile operating system market share Russian Federation 2020". Available at: https://gs.statcounter.com/os-market-share/mobile/russian-federation/#yearly-2020-2020-bar
81. RAEC (2020), "*Ecosystem of the Mobile Economy*." Available at: http://raec.ru/upload/files/ecosystem-mobile_200406.pdf
82. RAEC (2020), "*Ecosystem of the Mobile Economy*." Available at: http://raec.ru/upload/files/ecosystem-mobile_200406.pdf
83. RAEC (2020), "*Ecosystem of the Mobile Economy*." Available at: http://raec.ru/upload/files/ecosystem-mobile_200406.pdf
84. RAEC (2020), "*Ecosystem of the Mobile Economy*." Available at: http://raec.ru/upload/files/ecosystem-mobile_200406.pdf
85. Android is an open-source operating system for mobile devices and a corresponding open source project led by Google. As an open-source project, Android is a full, production-quality operating system for consumer products, complete with customizable source code that can be ported to nearly any device and with public documentation of its code that is available to everyone. By being open-source, Android is able to reduce the possibility of any central points of failure within its ecosystem that could be caused by stakeholders who restrict or control the innovations of any other player. From Android (2021), "About the Android Open Source Project." Available at: https://source.android.com/
86. AlphaBeta (2018), "AlphaBeta research brief: The estimated economic impact from Android across five Asian markets". Available at: https://www.alphabeta.com/wp-content/uploads/2017/08/180820-Android-Economic-Impact.pdf
87. Based on third-party data sources reflecting 3.6 billion estimated smartphone users globally and Android's 71 percent penetration rate in the mobile operating system market. Sources include: Newzoo (2020), "43% of active smartphones will be 5G-ready by 2023". Available at: https://newzoo.com/insights/articles/mobile-game-market-2020-smartphone-users-game-revenues-5g-ready-engagement/; StatCounter (2021), "Mobile operating system market share worldwide". Available at: https://gs.statcounter.com/os-market-share/mobile/worldwide
88. Google Russia (2020), "Android and Google Play: 11 years of support for Russian users, companies and the economy." Available at: https://russia.googleblog.com/2020/11/android-google-play-11.html

Job creation benefits

The Android operating system has also led to job creation in the wider economy. A popular mobile operating system in Russia, Android is responsible for app development jobs. The 2020 study of Russia's mobile ecosystem projected that between 2018 and 2022, the total number of jobs generated by the mobile technology sector in Russia will grow from 470,000 to 1.1 million, with an annual growth rate of around 24 percent.[89] These include high-value technology jobs such as mobile app developers, user experience (UI/UX) designers, software engineers and data scientists. With a high Android penetration rate in Russia,[90] Android is likely to be responsible for much of these jobs in the country. In addition to this direct employment, Android generates employment through indirect jobs (non-tech-related jobs within the app economy), as well as spillover jobs (jobs created outside of the app industry, such as firms supplying app developers with products and services).

89. RAEC (2020), "*Ecosystem of the Mobile Economy*." Available at: http://raec.ru/upload/files/ecosystem-mobile_200406.pdf
90. Statcounter, "Mobile operating system market share Russian Federation 2020". Available at: https://gs.statcounter.com/os-market-share/mobile/russian-federation/#yearly-2020-2020-bar

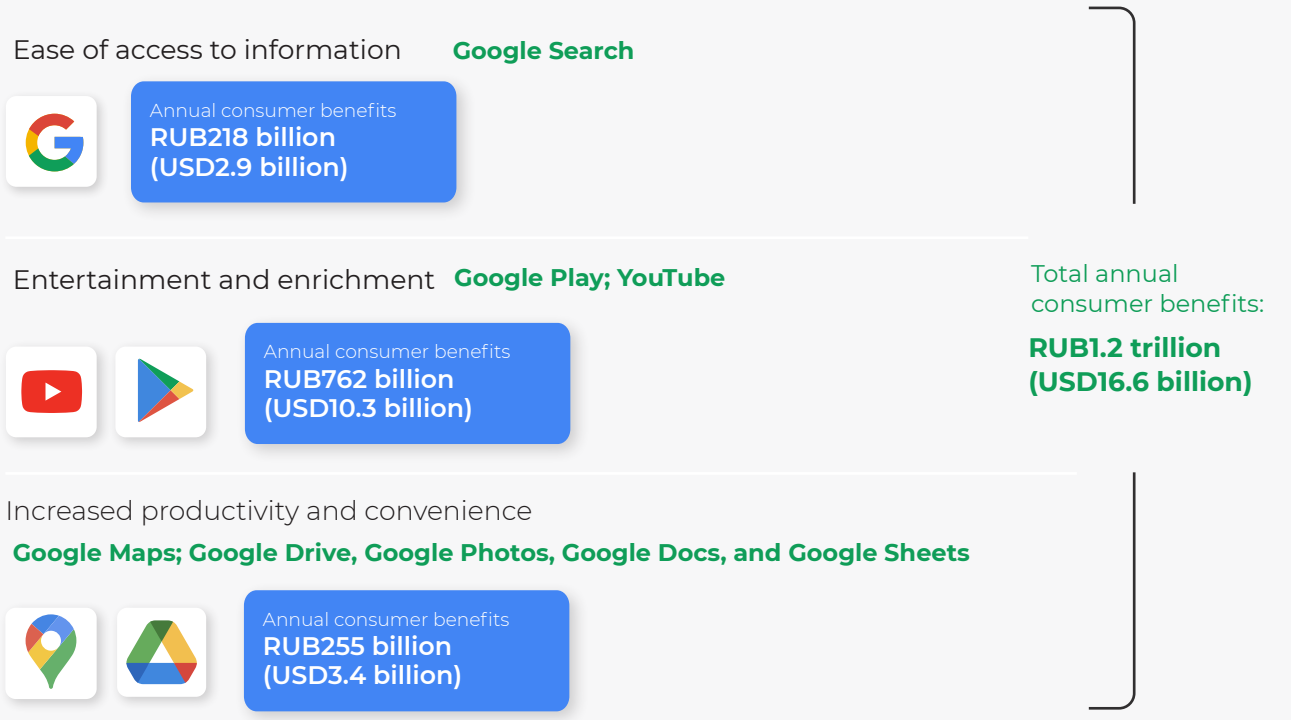
2.1.2 Benefits to consumers

The consumer benefits supported by Google are challenging to measure and calculate because individuals typically do not pay for these services. In the absence of price indicators, the economic principle of "willingness to pay" was adopted to estimate the value of consumer benefits by asking individuals how much they value specific products. This was used to derive the consumer surplus generated by Google's products, which relate to the value consumers experience from the products, expressed in monetary terms.

Taken together, the consumer surplus, or total value placed by consumers on Google's products, is estimated to be RUB1.2 trillion (USD16.6 billion). This value includes three main categories of benefits provided by Google products: ease of access to information (Google Search), entertainment and enrichment (Google Play and YouTube), and enhanced productivity and convenience (Google Maps, Google Drive, Google Photos, Google Docs, and Google Sheets). Exhibit 4 shows the breakdown of consumer benefits by category.

Exhibit 4 **Consumers in Russia are estimated to gain total benefits worth RUB1.2 trillion (USD16.6 billion) in 2021 from Google's products**

Estimated consumer benefits from Google products in Russia, 2021
Consumer surplus (RUB, USD)



Note: Estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.
Source: AlphaBeta analysis. See Appendix for details on methodology.

GOOGLE ENABLES CONSUMERS BETTER ACCESS TO INFORMATION

Google Search allows consumers instantaneous access to a wide array of information online. Self-enrichment appears to be the most common use of Google Search in Russia, with 39 percent of surveyed Google Search users in the country citing this, followed by shopping (at 22 percent of Google Search users).[91] For the 37 percent of surveyed Internet users who most prefer to use Google Search, the top reason for this choice is the high relevance of search results as compared to other search engines - as shared by about three-quarters (76 percent) of these users.[92] Other reasons include: its ability to provide access to a wide variety of international sources (51 percent), that it is quicker than other search engines (47 percent), and that it gives access to a wide range of academic articles (23 percent).[93] In 2021, the estimated consumer surplus from Google Search is estimated to be RUB218 billion (USD2.9 billion).[94]

In addition to allowing easy access to information, Google Search enables people to do so extremely efficiently, bringing them great convenience. Based on an international study showing that a search for a piece of information that takes 21 minutes in the library takes only seven minutes online, it is estimated that Google Search saves Internet users in Russia an average of 5.3 days per year on leisure-related (or non-work related) searches - see Exhibit 5.[95] Combined with the time savings of 4.3 days on work-related searches (as outlined in Section 2.1.1), the total time savings per year from Google Search is 231 hours, or equivalent to 9.6 days. AlphaBeta's survey also found that Internet users in Russia conduct on average about 10 Google searches per day.[96]

GOOGLE PRODUCTS ENTERTAIN AND ENRICH INTERNET USERS

Google products are also a source of entertainment and enrichment for Internet users in Russia. YouTube,[97] in particular, is a rich source of entertainment, and is also a channel for people to learn new skills or gain new knowledge.[98] One of YouTube's most appealing features is its direct access to music content. Globally, over 2 billion logged-in viewers watch a music video each month on YouTube, with more than half of these viewers consuming over 10 minutes of music content per day. In addition, YouTube Music, the platform's dedicated music streaming service, contains a wide catalog of over 70 million official music tracks for users to enjoy, providing users a large variety of entertainment options.[99]

Another popular form of content on YouTube is its gaming videos. YouTube also contains at least 40 million active gaming channels in 2020 globally,[100] allowing users to view original gaming playthroughs, news, and discussions from content creators. Gaming-related content has a huge following on the platform: globally, the platform recorded over 100 billion hours of watch time on gaming content between October 2019 and September 2020.[101]

As a convenient platform for consumers to access a range of smartphone applications, as well as digital books, music and films, Google Play has also brought a variety of entertainment options to Russian consumers. With over 2.5 million mobile applications available on the platform, Google Play provides Russian consumers with a large range of apps to fulfil their day-to-day needs.[102]

In 2021, the estimated total consumer surplus from YouTube and Google Play in Russia is RUB762 billion (USD10.3 billion).

91. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513
92. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513
93. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513
94. In the absence of price indicators, the economic principle of "willingness to pay" was used to estimate the value of consumer benefits by asking individuals how much they value specific products. This was used to derive the consumer surplus generated by Google's products, which relate to the value consumers experience from the products, expressed in monetary terms. This was derived by multiplying the average "willingness to pay" per consumer for the product, by the estimated number of users of the product. AlphaBeta's survey of Internet users in Russia was used to derive these data inputs. See methodology for full details.
95. Sources include: Yan Chen, Grace Young Joo Jeon and Yong-Mi Kim (2014), A day without a search engine: an experimental study of online and offline search. Experimental Economics. Available at: https://link.springer.com/article/10.1007/s10683-013-9381-9; Based on AlphaBeta consumer survey of 513 Internet users in Russia
96. Based on AlphaBeta survey of Internet users in Russia (2021), n = 513
97. Cohen, L. (2020). Think with Google. "Why marketers should care about the music industry's latest transformation." Available at: https://www.thinkwithgoogle.com/marketing-strategies/video/music-industry-changes/
98. Ingham, T. (2020). Music Business Worldwide. "Over 2bn YouTube users are now playing music videos every month." Available at: https://www.musicbusinessworldwide.com/over-2bn-youtube-users-are-now-watching-music-videos-every-month
99. Musically (2020). "." Available at: https://musically.com/2020/10/30/youtube-now-has-30m-music-and-premium-subscribers-globally/
100. YouTube (2021), Blog. "2020 is YouTube Gaming;s biggest year, ever: 100B watch time hours" Available at: https://blog.youtube/news-and-events/youtube-gaming-2020/
101. YouTube (2021), Blog. "2020 is YouTube Gaming;s biggest year, ever: 100B watch time hours" Available at: https://blog.youtube/news-and-events/youtube-gaming-2020/
102. Iqbal, M. (2020), Business of Apps. "App download and usage statistics." Available at: https://www.businessofapps.com/data/app-statistics/

GOOGLE PRODUCTS BRING CONVENIENCE TO PEOPLE'S DAILY LIVES

Google Maps brings about productivity in the public transport and driving journeys of Russian citizens. This product is popular among Russian smartphone users, with a 2018 survey indicating that two-thirds (67 percent) of smartphone users in Russia who utilize navigation and maps services had downloaded Google Maps.[103] Drawing upon real-time data such as public transport arrival times and road traffic conditions, Google Maps' wayfinding and navigation features allow users to optimize their trips. In Russia, Google Maps users are estimated to save 30 hours and 9.7 hours on driving and public transport journeys respectively in 2021 (see Exhibit 7). This is a total of 39.7 hours on both types of journeys in 2021.

Exhibit 5 **Google Search and Google Maps help consumers save time, bringing convenience to their lives**

Time savings due to use of Google Search and Google Maps to consumers in Russia, 2021
Days / hours per year

Note: Estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.

Source: AlphaBeta analysis. See Appendix for details on methodology.

In addition, by allowing digital data to be stored and accessed through multiple devices including laptops, tablets and smartphones, Google's cloud-based services such as Google Drive, Google Photos, Google Docs, and Google Sheets provide great convenience to Russian consumers. These services enable them to manage files, folders, music and photos on the fly – without having to retrieve the information from a piece of hardware.

In 2021, the estimated consumer surplus from Google Maps, Google Drive, Google Photos, Google Docs, and Google Sheets is estimated to be RUB255 billion (USD3.4 billion).[104]

103. OMD (2018), *Mobile search usage and attitudes research*. Survey commissioned by Google.
104. In the absence of price indicators, the economic principle of "willingness to pay" was used to estimate the value of consumer benefits by asking individuals how much they value specific products. This was used to derive the consumer surplus generated by Google's products, which relate to the value consumers experience from the products, expressed in monetary terms. This was derived by multiplying the average "willingness to pay" per consumer for the product, by the estimated number of users of the product. AlphaBeta's survey of Internet users in Russia was used to derive these data inputs. See methodology for full details.

2.1.3 Benefits to society

Beyond the benefits to businesses and individuals, Google delivers benefits to the broader Russian society that may not accrue directly to a specific company or person. In economics, these are often termed "spillover benefits". These benefits might not appear in GDP measures today but consist of other objectives that are important to strengthening Russia's economy over time.

These benefits are a result of the use of Google products or direct initiatives and partnerships Google has engaged in Russia. In particular, the company's products provide a range of wider societal benefits such as disseminating critical information to the general public during crises and promoting the local creative and arts community.

GOOGLE SUPPORTED THE DISSEMINATION OF CRITICAL INFORMATION DURING THE COVID-19 PANDEMIC

A key example of these intangible benefits is the use of Google's products and services to promote official COVID-19 related information from the Russian Ministry of Health, the consumer watchdog, Rospotrebnadzor, the Government stopcoronavirus.rf portal, WeAreTogether volunteering portal as well as the Moscow city Government during the COVID-19 pandemic. Google supported these agencies by prioritizing their public health messages across Google Search, Google Maps, G Pay and YouTube in multiple formats such as banners and alerts.

In addition, Google also supported some of these agencies through its Ad Grants Crisis Relief Program and the YouTube COVID-19 Ads Inventory Program which allowed government authorities to broadcast critical information to the general public by leveraging the Google Ads and YouTube advertising.[105] The COVID-19 Ads Inventory Program, which is continuing in 2021, in particular, allows the Russian Ministry of Health, the Moscow city Government, the Russian Government official portal stopcoronavirus.rf and the WeAreTogether volunteering movement to disseminate critical information on the COVID-19 crisis, as well as vaccination and economic recovery efforts by using Google Search ads. Through this program, the Ministry of Health government portal attracted significant traffic of 50 million visits within two months after its launch. Between May 18 and 25, 2020, more than 900,000 Internet users accessed this portal. Throughout 2020 and 1Q 2021 about 84 percent of all Ministry's traffic was being attributed to Google's products such as Google Search, Google Ads, YouTube etc.[106]

To build morale during the pandemic as people were forced to stay home to curb the outbreak, Google launched the #AtHomeTogether project on YouTube in April 2020 which featured a playlist of videos with tips on remote working and how to spend time at home effectively, while the YouTube Russia channel hosting the project reached over 1 million subscribers.. As part of this effort, YouTube also created two videos featuring over 50 popular YouTube bloggers and musicians in Russia to promote messages of encouragement and advise the public to remain at home, with the video garnering over 34 million views to date. Google also launched a global awareness campaign called "Do the Five" and "Wear the Mask", which featured five simple steps for slowing down the spread of the disease as well as a series of COVID-19-related doodles on its web home page.

In 2021, Google also supported the Russian government's COVID-19 vaccination-related efforts by launching a special alert feature in Google Search and an information panel on YouTube which directs users to the dedicated COVID-19 vaccination page on the stopcoronavirus.rf portal. This was to help raise public awareness about the available vaccine options.

105. Philanthropy News Digest (2020), "Google Commits $50 Million for Global COVID-19 Response." Available at: https://philanthropynewsdigest.org/news/google-commits-50-million-for-global-covid-19-response
106. Google Russia, internal information.

GOOGLE'S PLATFORMS EDUCATE YOUTH IN AN ENGAGING MANNER

Google's platforms and in particular, YouTube, has been used to educate youth in an engaging and interactive manner. For example, Google's School of Life project gathered input from leading companies, popular experts, and opinion leaders to develop original educational content on YouTube.[107] Every evening for a week in September 2020, the project covered out-of-school-curriculum topics such as finance, psychology and managing interpersonal relationships through its online videos. Live streamed on YouTube, over 30 videos were developed in a format that was engaging to youth. Within its seven-day span, these videos received 2.6 million views (on both YouTube and the local VK.com platform where these videos were re-shared); social media posts about them were viewed 4.3 million times; and the program was mentioned in 62 media publications, which exposed them to about 18.6 million readers. Another Google initiative which aims to educate students through YouTube is "Mendeleev Explains", a YouTube channel dedicated to teaching chemistry to millennials by making the subject approachable and relevant to their everyday lives and featuring famous YouTube creators popular with youth. The channel encompasses a playlist of over 160 videos on the subject, organized around themes such as education, nature, beauty, fashion, environment, food, transport and technology.[108] The project was integrated into the digital educational platform created by the Government of Moscow for school kids.

GOOGLE SUPPORTS NONPROFITS IN GIVING THEM ACCESS TO DIGITAL TOOLS FOR THEIR OPERATIONS

Google supports nonprofit organizations (or "nonprofits") through its suite of free digital resources dedicated to these organizations. Through its Google for Nonprofits program, nonprofits in Russia have full and free access to Google products such as Google Workspace (formerly known as G Suite) and typically paid features within Google Maps such as data visualization tools for free.[109] Nonprofits can also leverage YouTube resources such as the Creator Academy to learn to create videos to broaden their public outreach.[110] These organizations are also given in-kind Google Ad Grants to support them in adopting digital marketing tools that could help expand their online presence and reach international audiences for their operations, allowing them to engage with more supporters and fundraisers.

GOOGLE PROMOTES THE AWARENESS AND PRESERVATION OF NATURE

To increase awareness and promote the preservation of nature, Google partnered with the Russian Geographical Society in 2015 in honor of the society's 170th anniversary to digitize Russia's largest nature reserves and national parks.[111] Using Google Street View, the company captured panoramas of four of Russia's protected sites which includes Sochi National Park, Altai, and Kronotsky nature reserves and the volcanoes of Kamchatka National Park. This initiative allowed Internet users to virtually "walk" through the scenic landscapes of these parks, and experience a "tour" of natural habitats that are challenging to reach on foot. The project covered a total distance of 160 kilometers across various water bodies and 1,300 kilometers by air in order to capture the virtual panoramas.

GOOGLE HELPS TO PROVIDE PROGRAMS THAT HELP MEMBERS OF UNDERREPRESENTED COMMUNITIES BUILD SELF CONFIDENCE AND IMPROVE THEIR EMPLOYABILITY

Google plays a part in supporting women, students, and other underrepresented communities, such as ethnic minorities, in their personal and professional lives. In 2020, Google partnered with the social services and employment center in Moscow, My Career, to bring its "I am Remarkable" program to all visitors to the center.[112] While My Career supports individuals in their job search and provides counselling services, the "I am Remarkable" program complements the centers' effort through workshops that help participants instill self-confidence in their achievements for both their personal and professional lives, and boost their overall morale and employability. Globally, the program has impacted around 200,000 individuals with an average of 82 percent of participants sharing that they feel more confident in themselves after attending the workshop.[113]

107. YouTube (2020), "School of Life." Available at: https://www.youtube.com/watch?v=uRKLxCpRVZM
108. YouTube (2020), "Mendeleev Explains.' Available at: https://www.youtube.com/channel/UCA7p_U2543cy68dtXY94__A
109. Google Support (2020), "Product offerings (by country)." Available at: https://support.google.com/non-profits/answer/1614602
110. Google for Nonprofits (2020), "YouTube Nonprofit program." Available at: https://www.google.com/nonprofits/offerings/youtube-nonprofit-program/
111. Sources include: Google Russia (2015) "National parks and reserves of Russia on Google Maps: from Sochi to Kamchatka in one click." Available at: https://russia.googleblog.com/2015/11/google.html; Kuznetsov, D. (2015), "Google has digitized Russian reserves," RG RU Digital. Available at: https://rg.ru/2015/11/06/zapovedniki-site.html
112. Google (2020), "What modern teens are proud of." Available at: https://iamremarkable.withgoogle.com/success-stories/goodle-russia-partnered-mycareer-to-bring-iamremarkable-to-teenagers
113. Sources include: Google (2020), "#IamRemarkable." Available at: https://iamremarkable.withgoogle.com/; IamRemarkable (2021), Twitter post. Available at: https://twitter.com/IamRemarkable_/status/1379453905214398466

GOOGLE PROMOTES RUSSIAN ARTS AND CULTURE

Google plays an important part in promoting Russia's arts and culture by digitally capturing and recording national works to allow online audiences to easily view and experience Russian culture. For example, in 2016, Google digitally captured a temporary exhibition of the Russian artist Vasiliy Kandinskiy's artworks during the commemoration of his 150th anniversary. To ensure that this captured every possible detail, this digital representation of his work was reproduced in high resolution – at the level of gigapixels. Google also developed a dedicated web page which displays Kandinskiy's works, and features sonar versions of his art and an augmented reality (AR) art gallery to allow online users to experience his art from wherever they are.[114]

One other example is the celebration of the 70th anniversary of the Russian Victory in the Great Patriotic War in 2015 where Google hosted and presented a virtual expo of Russian war history museums to the global audience. The company also launched the Alive Memory project, which crowdsourced a collection of preserved family letters from the war period, creating an archive of historical documents and allowing them to be displayed digitally for everyone.[115]

On top of artworks, Google also plays a part in digitally capturing and recording Russian literature online. For example, in 2014, in collaboration with eight Moscow museums and with the support of the Moscow Department for Culture, Google launched a project titled Literary Moscow which aimed to digitalize the collections of these museums for the first time.[116] Utilizing Google Street View, participating museums were able to create virtual exhibitions dedicated to prominent Russian writers and poets, while online visitors could use an interactive digital map to explore popular routes in Moscow, which reflected the city's culture of writing.

Google has also taken lengths to preserve Russia's national heritage through digital means using Google Street View. In 2015, Google created a digitized re-creation of the world-famous Bolshoi Theatre on the Google Cultural Institute platform, which seeks to build free tools and technologies for cultural organizations to showcase and share their cultural treasures and stories with online audiences globally[117] by capturing and displaying panoramas of the building using Google Street View.[118] Through a virtual tour and exhibition display, online audiences are able to experience a close-up view of the theatre's architectural features, as well as a brief history of all performances in the theatre. Another example is Google's feature of the Russian Orthodox Church, a United Nations Educational, Scientific and Cultural Organization (UNESCO) heritage site. To bring the Holy Trinity-St. Sergius Lavra to international audiences, Google captured the church's famous indoor and outdoor murals and even recreated a virtual panorama of the church's locale through its Google Street View technologies. [119]

Google also promotes Russia's food culture to international audiences through its Google Arts & Culture platform. Working in partnership with the Federal Agency for Tourism in Russia as well as cultural partners Mosfilm Cinema Concern, The State Tretyakov Gallery, and The State Russian Museum, Google launched Eat Your Way Across

114. Google Arts & Culture (2021), "Sounds Like Kandinsky." Available at: https://artsandculture.google.com/project/kandinsky
115. Friends Moscow (2020), "Alive Memory." Available at: https://friends.moscow/en/works/living-memory
116. Google Russia (2014), "Literary Moscow together with Google: virtual walks through the city's leading museums." Available at: https://russia.googleblog.com/2014/10/google.html
117. Google, "About the Google Cultural Institute". Available at: https://support.google.com/culturalinstitute/partners/answer/4395223?hl=en&ref_topic=4387717
118. Sources include: Bolshoi Theatre (2015), "The Bolshoi Joins Google Cultural Institute," Available at: https://www.bolshoi.ru/en/about/press/articles/presentation/3235/; Google Arts & Culture (2015), "Bolshoi Theatre." Available at: https://artsandculture.google.com/exhibit/1ALim06CsHXkLA
119. Google Arts & Culture (2015), "The Holy Trinity-St. Sergius Lavra." Available at: https://artsandculture.google.com/partner/trinity-lavra-of-st-sergius
120. Google Arts & Culture (2021), "Eat your way across Russia." Available at: https://blog.google/outreach-initiatives/arts-culture/eat-your-way-across-russia/
121. Beard. N. (2014), "Online reading marathon of Anna Karenina goes viral." The Calvert Journal. Available at: https://www.calvertjournal.com/articles/show/3190/online-reading-marathon-of-anna-karenina-goes-viral
122. Russkiy Mir Foundation (2015), "Google's live reading of Anna Karenina sets Guinness record." Available at: https://russkiymir.ru/en/news/185471/
123. Google (2018), "From small to big." Available at: https://skazki.withgoogle.com/
124. Google Russia (2018), "Google readings "From young to old"." Available at: https://russia.googleblog.com/2018/12/google.html

Russia in April 2021, a digital hub that showcases culinary stories and traditions all across Russia.[120] The hub highlights food and stories from more than 20 regions, over 100 restaurants and iconic food places, as well as features 11 chefs, experts and food enthusiasts. The initiative also put together 64 online exhibitions about Russia's food culture, and more than 1,000 images and videos from different parts of the country. By featuring Russia's unique culinary history and experience, Google also helps to create visibility of Russia's national cuisines, in turn promoting culinary tourism.

Finally, Google also plays a key role in promoting Russian literature to both domestic and global audiences through its famous, annually-held Google Readings initiative. Since 2014, this project has gathered hundreds of participants from Russia and across the world almost every year to collaborate on a marathon-style reading of famous Russian literature for the worldwide community, where participants take turns reading passages on YouTube's live broadcasts. Spanning 36 hours in duration, the first iteration of this event in 2014 featured over 700 Russian speakers globally, who took part to read Leo Tolstoy's epic novel "Anna Karenina". These included prominent Russians such as cosmonaut Georgy Grechko and the 2014 Winter Olympic champion figure skater, Adelina Sotnikova.[121] This live broadcast attracted over three million visitors, setting a new Guinness record for the largest audience for a "Reading Aloud Marathon" at the time. [122] Featuring the theme "From Young to Old", the latest iteration of the event in 2018 featured over 300 readers, including Russian government press secretary Dmitry Peskov and television host Tutta Larsen, who read aloud Russian folk fairy tales.[123] The event even used Google's Tilt Brush technology, allowing artists to paint live in 3D spaces during the readings to recreate the atmosphere of Russian fairy tales in front of audiences.[124] Box 6 features another example of how Google has promoted the arts through its products - helping the world-famous Bolshoi Theatre connect with global audiences during the COVID-19 pandemic.

Box 6. Helping Bolshoi Theatre connect with the world during the COVID-19 pandemic through live YouTube broadcasts of performances

When gatherings and public events were suspended during the COVID-19 pandemic in 2020, the famous Bolshoi Theatre faced the prospect of undergoing a long period of empty halls and limited engagement with theatregoers.

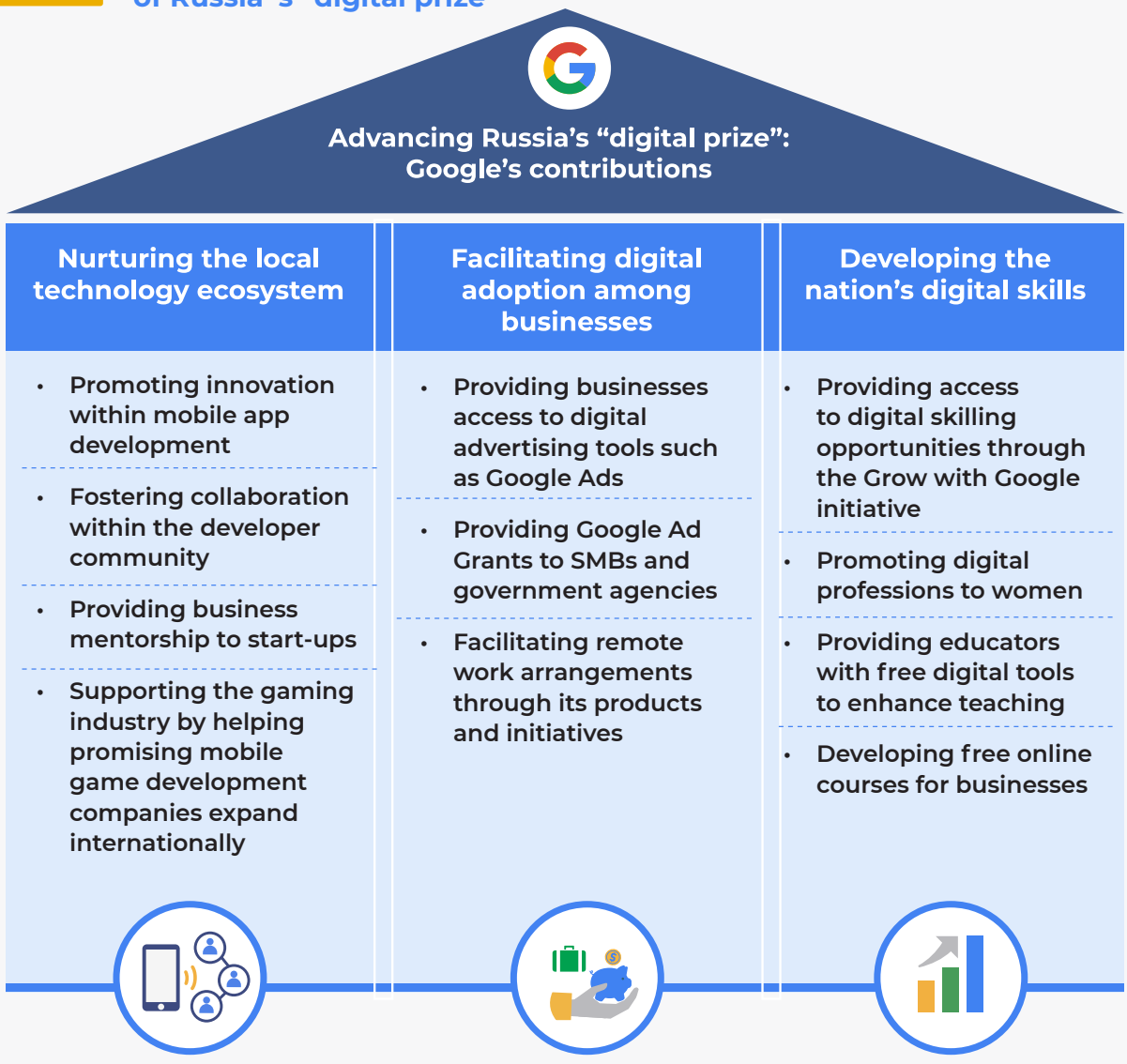
To support the theatre in staying connected with its audience, Google brought the Bolshoi Theatre online by broadcasting its past performances through YouTube's streaming platform.[125] This was a highly successful initiative that helped the theatre broaden its engagement beyond Russia's borders. Through the first six online broadcasts alone, the theatre's YouTube channel managed to capture three million unique viewers from across 134 different countries worldwide, contributing 6.5 million views in total to the channel.[126] In particular, the theatre's broadcast of "The Sleeping Beauty" attracted more than 1.5 million viewers, with the number of online search queries on this broadcast growing by five times during the event.[127] Overall, the majority of viewers during the initiative came from the United States, Japan, and even Brazil.[128]

125. Bolshoi Theatre (2020), "The Bolshoi Theatre and Google continue online streaming on YouTube." Available at: https://www.bolshoi.ru/en/about/press/articles/none/2020-05-04-broadcast/
126. Bolshoi Theatre (2020), "The Bolshoi Theatre and Google continue online streaming on YouTube." Available at: https://www.bolshoi.ru/en/about/press/articles/none/2020-05-04-broadcast/
127. Bolshoi Theatre (2020), "The Bolshoi Theatre and Google continue online streaming on YouTube." Available at: https://www.bolshoi.ru/en/about/press/articles/none/2020-05-04-broadcast/
128. Bolshoi Theatre (2020), "The Bolshoi Theatre and Google continue online streaming on YouTube." Available at: https://www.bolshoi.ru/en/about/press/articles/none/2020-05-04-broadcast/

2.2 Google's contributions to Russia's digital transformation journey

Across the three policy focus areas within the government's digital transformation agenda (highlighted in Chapter 1), Google has made significant contributions through its products and programs in the country. Exhibit 6 shows a summary of these contributions.

Exhibit 6 Google's products and programs help to accelerate the capture of Russia''s "digital prize"



To nurture the local technology ecosystem, Google has supported Russia through its products and initiatives, with a particular focus on supporting the developer and start-up communities:

- **Promoting innovation within mobile app development.** As illustrated in Box 6 of Section 2.1.1, Google's Android operating system has been key to enabling innovations by mobile app developers. As a free-to-use, open-source operating system for mobile devices, Android allows app developers to view and use Android's source codes to create mobile applications that are compatible across all Android devices.[129] This eliminates the need for app developers to program different versions of their app for different Android devices and allows them to save on development time and focus on innovating and improving their apps. Moreover, app developers can reach more than 2.5 billion people globally by leveraging Android and Google Play store.[130]

- **Fostering collaboration within the developer community. Google has also taken a lead in fostering collaborations within Russia's developer community through its Google Developer initiatives.** These include Google Developer Groups, where Google connects with local developers and technologists from diverse backgrounds, shares knowledge of Google development tools with them, organizes training sessions and workshops on developer skills, and arranges industry conferences to promote collaboration within the community.[131] The company also runs its Google Developers Experts program, a global network of highly experienced technology experts, influencers and thought leaders who provide support to developers through events and conferences that focus on key Google technologies. Such programs provide local developers with the latest trends and updates within the technology industry, allowing them to remain relevant and gain the necessary skills to support the local tech ecosystem.

- **Providing business mentorship to start-ups through the Google Growth Lab.** Google launched the Google Growth Lab accelerator program in September 2020 to help promising Russian start-ups accelerate their businesses through access to industry experts and mentorship.[132] Through the program, start-ups receive business advice from venture capitalists, industry experts, and experienced entrepreneurs to bring their businesses to the next stage of growth. A three-month program for every batch of participants, this program helps aspiring entrepreneurs acquire the knowhow to develop their go-to-market strategy, conduct creative digital advertising campaigns, and create expansion plans into overseas markets. Participants would also be able to learn how to leverage Google's digital tools to measure their performance and create data-driven approaches to grow their business. Recent alumni of the program include Delimobil, a Russian tech start-up which created a digital car-sharing platform service; Voximplant, a Russian company which provides cloud-platform services for developers in communications operations; and Red Panda Labs, a Russian app development company which has published several dating apps including SweetMeet, Evermatch, and Curvydating.[133]

- **Supporting the gaming industry by helping promising mobile game development companies expand internationally through Game Drive.** Launched in November 2020 in partnership with MY.GAMES, Mail.Ru Group's international gaming brand which offers games and Internet-related services and products, Game Drive is an accelerator program which aims to help promising mobile game developers enter the international market.[134] Participating mobile gaming companies receive advice from experts from Google and MY.GAMES to help them scale their games and gain entry into international markets. Successful participants may also receive funding from MY. GAMES to further expand their ventures.[135] Since its launch, over 40 applications have been received from Russia, as well as Italy, France, Germany, the United Kingdom, Spain and Kuwait, with eight studies taking part in Demo Day, a closed-door online event where applications were judged by a panel of experts and selected. In this event, experts from Google Play, Google Ads, Google AdMob and MY.GAMES Venture Capital provided detailed comments and individual consultations to shortlisted participants.

129. Android is an open-source operating system for mobile devices and a corresponding open source project led by Google. As an open-source project, Android is a full, production-quality operating system for consumer products, complete with customizable source code that can be ported to nearly any device and with public documentation of its code that is available to everyone. By being open-source, Android is able to reduce the possibility of any central points of failure within its ecosystem that could be caused by stakeholders who restrict or control the innovations of any other player. From Android (2021), "About the Android Open Source Project." Available at: https://source.android.com/
130. Based on third-party data sources reflecting 3.6 billion estimated smartphone users globally and Android's 71 percent penetration rate in the mobile operating system market. Sources include: Newzoo (2020), "43% of active smartphones will be 5G-ready by 2023". Available at: https://newzoo.com/insights/articles/mobile-game-market-2020-smartphone-users-game-revenues-5g-ready-engagement/; StatCounter (2021), "Mobile operating system market share worldwide". Available at: https://gs.statcounter.com/os-market-share/mobile/worldwide
131. Sources include: Google (2021), "GDG Moscow." Available at: https://gdg.community.dev/gdg-moscow/; Google (2021), "GDG St. Petersburg." Available at: https://gdg.community.dev/gdg-st-petersburg/
132. Google Russia (2020), "Start-up Growth Lab: working on the product and its promotion together with Google." Available at: https://russia.googleblog.com/2020/09/startup-growth-lab-google.html
133. Sources include: Google Russia (2020), "Start-up Growth Lab: working on the product and its promotion together with Google." Available at: https://russia.googleblog.com/2020/09/startup-growth-lab-google.html; Google Russia (2020), "Recruitment for the second stream of the Google Growth Lab accelerator opened with a focus on marketing and international growth." Available at: https://russia.googleblog.com/2021/02/google-growth-lab.html; Google Russia (2020), "Startup Growth Lab: summing up the first stream." Available at: https://russia.googleblog.com/2020/12/startup-growth-lab.html
134. Google Russia (2020), "Game Drive is a business acceleration program for mobile game developers from Google and MY.GAMES Venture Capital." Available at: https://russia.googleblog.com/2020/11/game-drive-google-mygames-venture.html
135. Game Drive (2021), MY.GAMES Venture Capital. Available at: https://mgvc.com/en/gamedrive

To facilitate digital adoption among businesses, Google has undertaken the following initiatives in Russia:

- **Providing businesses access to digital advertising tools such as Google Ads. Google's digital advertising tools such as Google Ads**, Google AdSense and YouTube advertising allow businesses to conduct better customer outreach through targeted advertising, bringing their products and services to the right audiences.

- **Providing Google Ad Grants to small- and medium- sized businesses (SMBs) and government agencies during the COVID-19 pandemic**. Google has also allowed businesses to use its digital advertising tools for free in times of crises. For example, to help organizations that were impacted by the COVID-19 pandemic, Google allocated more than RUB780 million (USD10.5 million) worth of Google Ad Grants in April 2020 to support Russian small- and medium-sized businesses (SMBs) and government agencies with ramping up their digital advertising efforts.[136] These grants enabled recipient businesses and government agencies to use Google's search advertising tool (Google Ads) for free.[137] Using these grants, businesses were able to advertise their products and services through advertisements to expand their customer reach online during the pandemic.[138] Government agencies are also able to utilize these grants to instantaneously share public health and COVID-19 related economic incentives and updates through Google's digital marketing services, allowing them to reach out to more individuals during the crisis as quickly as possible. Given the ongoing nature of the pandemic, this program for government agencies was extended till the end of 2021.

- **Facilitating remote work arrangements through its products and initiatives.** To help individuals and businesses move their work online during the lockdown restrictions imposed during the pandemic, the company made its video conferencing software, Google Meet, free for all individuals and businesses globally. Google Meet allows organizations to hold work discussions remotely, allowing professionals to collaborate online without the need for physical interaction. To ensure that businesses can still function with continued pandemic restrictions around the world, free and unlimited calls for up to 24 hours each in length were made accessible till June 30, 2021.[139] In addition, Google also collaborated with the city of Moscow to host online webinars to teach participants to utilize Google Drive, its online collaboration and document editing tool, to enable organizations to work remotely.[140] While these initiatives encourage businesses to adopt digital productivity tools during the pandemic, they are also likely to have sustained productivity benefits for businesses if the use of these tools outlive the pandemic.

136. Google Russia Blog (2020), "$10.5 million to support SMEs and government organizations in the healthcare sector." Available at: https://russia.googleblog.com/2020/04/105.html
137. Sources include: Google Russia Blog (2020), "$10.5 million to support SMEs and government organizations in the healthcare sector." Available at: https://russia.googleblog.com/2020/04/105.html; Google Support (2020), "COVID-19: Ad credits for Google Ads Small and Medium-sized Businesses." Available at: https://support.google.com/google-ads/answer/9803410?hl=en&ref_topic=9803759
138. Google Support (2020), "COVID-19: Ad credits for Google Ads Small and Medium-sized Businesses." Available at: https://support.google.com/google-ads/answer/9803410?hl=en&ref_topic=9803759
139. Google Workspace (2021), Twitter account. Available at: https://twitter.com/GoogleWorkspace/status/1376957338733674499?s=20
140. MyCareer, Moscow (2020), "Webinar "Google Drive. Lesson 1: Experience"." Available at: https://mycareer.moscow/#/meetings/detail/3343

To help develop the nation's digital skills, Google also has a range of programs to support digital skills development in Russia:

- **Providing access to digital skilling opportunities through the Grow with Google initiative.** A key program in helping Russians acquire digital skills is the Grow with Google initiative, a global Google initiative. Launched in Russia in November 2020 and supported by the Ministry of the Economic Development of Russia, this initiative provides a collection of free online courses in digital skills such as digital marketing, analytics and website development.[141] One key target of the program is to also train at least 1 million individuals and companies (combined) in attaining new digital skills to help them cope with the pandemic.[142] While Grow with Google is global in scope, Google also provides localized course content to suit the needs of its Russian user base. For example, the program in Russia provides an introductory course to digital marketing which is accredited by the European branch of Interactive Advertising Development Association (IAB) and the Open University, allowing individuals or businesses to gain certifiable skills which are relevant for marketing or operating within neighboring European markets.[143]

- **Promoting digital professions to women.** A key initiative by Google is the Women Developer Academy program, which aims to help participants gain the skills and resources they need to become tech presenters and speakers.[144] The program also bridged the participants to other women-focused tech programs such as the Women Techmakers Community, which are aimed at connecting networks of female developers. Under the broad digital skills-focused Grow with Google initiative, the Google for Women program in Russia aims to equip aspiring female entrepreneurs and content creators with the digital skills to open their own business, do programming, build a successful career, start their own YouTube channel, or succeed in something else.[145] As part of this program, the social impact organization todogood pioneered an initiative, in partnership with leading Russian universities and with the support of a grant from Google. org (Google's non-profit charitable arm), to help women access in-demand digital professions.[146] This initiative aims to provide more than 2,500 women with additional education programs, free of charge, over three years. Training commences in the summer of 2021.

- **Providing educators with digital tools to enhance teaching.** To help schools conduct distance learning during the COVID-19 pandemic, Google released its Google for Education platform for free globally in March 2020.[147] The platform allows schools and teachers to conduct remote learning leveraging Google's online collaborative tools such as Google Docs, which allow for interactive, real-time collaboration. Educators have also been using this program to set homework assignments for students online, and keep track of their students' progress digitally. To help schools in Russia utilize these tools effectively, Google launched the Teach From Home hub, supported by the Ministry of Education in Russia.[148] This is an online resource hub which teaches educators on how to use digital tools such as Google Meet and Google Slides to run "live" and engaging lessons online. By helping teachers gain the necessary digital skills required to conduct distance learning, Google plays an important role in helping the education system integrate digital tools into teaching pedagogies.

- **Developing free online courses for businesses. As elaborated in Section 2.1.1, Google's BusinessClass program** (jointly launched with Sberbank in 2016) imparts business and entrepreneurship skills to individuals who aspire to be business-owners and SMBs, including digital skills. As part of this initiative, the company also developed the "AI for Small Business" course in 2019, which teaches participants how to integrate machine learning tools into their business processes. [149] The course introduces both theoretical and practical elements of AI application, teaching participants how to solve tasks with the support of AI technologies.

141. Sources include: Google (2020), "Grow with Google (RU)." Available at: https://grow.google/intl/ru/; Google Russia (2020), "Platform Together with Google will support the recovery and growth of the Russian economy." Available at: https://russia.googleblog.com/2020/11/google.html
142. Google Russia (2020), "Platform Together with Google will support the recovery and growth of the Russian economy." Available at: https://russia.googleblog.com/2020/11/google.html
143. Google (2020), "Internet Marketing Basics." Available at: https://learndigital.withgoogle.com/skills-ru/course/digital-marketing
144. Google Developers Blog (2021), "Women Developer Academy Program," Habr. Available at: https://habr.com/ru/company/google/blog/545184/
145. Google for Women. Available at: https://grow.google/intl/ru/google-for-women
146. Project "I can". Available at: https://i-can.pro/
147. Google Russia (2020), "Helping teachers and students stay together." Available at: https://russia.googleblog.com/2020/03/blog-post_31.html
148. Google (2020), Teach From Home. Available at: https://teachfromanywhere.google/intl/ru/
149. Sberbank (2019), "Sberbank and Google announce the launch of two new courses for Business Class national program." Available at: https://www.sberbank.ru/en/press_center/all/article?newsID=e6564d08-5cc0-4ef0-b485-e08151703cb2&blockID=1539&regionID=77&lang=en&type=NEWS

Appendix: Estimating Google's economic impact in Russia

This Appendix shows an overview of how the benefits of Google's products were estimated for businesses and consumers, and how the benefits of YouTube to content creators were derived.

OVERVIEW

To estimate the business benefits, the economic value generated by businesses that used Google's products was calculated. These are in the form of increased revenue (through increased customer outreach and access to new markets), as well as improved productivity (through time savings). The Google products included in this analysis of business benefits include Google Search; Google Ads; Google AdSense; YouTube; and Google Play. Here is the list of benefits sized:

- Net advertising benefits (i.e., the additional revenue earned through advertising, less the advertising cost) for businesses gained through **Google Search and Google Ads**
- Net advertising benefits for businesses gained through **Google AdSense**
- Income generated by website publishers through **Google AdSense**
- Net advertising benefits for businesses gained through **YouTube**
- Advertising income earned by **YouTube** video/content creators
- Revenues by app developers in Russia earned through **Google Play** from both domestic and foreign markets
- Time savings gained by employees when using **Google Search**
- Revenue generated by new businesses and additional revenue generated by SMBs from participating in Google's **BusinessClass program**

These were estimated based on both proprietary AlphaBeta data and a range of third-party data sources. Full details of the estimate for each benefit, and the data sources and assumptions used to derive each are shown below. The sum of these benefits was reflected as the total annual business benefits, based on the year 2021. All estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.

Estimating the consumer benefits supported by Google is a challenging task. This is because most Google products are free to use (such as Google Search, google Maps, and YouTube). Consumer benefits were estimated based on the consumer's willingness to pay.[150] Primary data used in the analysis was collected from a consumer survey of 513 Internet users in Russia. This sample size is statistically significant based on Russia's online population, at a 95 percent confidence level (the level typically adopted by researchers).

150. This report adopts the economic "willingness to pay" principle to estimate the value of consumer benefits by asking individuals how much they value specific products – also known as consumer surplus - through a nationwide survey of Internet users. For further details on the methodology, please refer to the Appendix.

The survey was conducted online, which was deemed suitable given the intention to survey Internet users. The sample was also checked for its representativeness of Russia's Internet population based on demographic variables including age, income level, and the geographical location of respondents. In addition to the consumer survey, this research also leveraged big data gathering methods such as those used to determine the amount of time saved by using Google Maps for driving and public transport, as well as third-party sources. The Google products included in this analysis of consumer benefits include Google Search; Google Play; YouTube; Google Maps; and Google Drive, Google Photos, Google Docs, and Google Sheets. Here is the list of benefits sized:

- Consumer surplus (i.e. consumer's willingness to pay) valued by consumers from the use of **Google Search; Google Maps; YouTube; Google Play; Google Drive; Google Photos; Google Docs; and Google Sheets.**
- Time savings gained by consumers from the use of **Google Search** (which enhances the efficiency of information search versus traditional offline tools) and **Google Maps** (which enhances the efficiency of consumers' driving and public transport trips by optimizing navigation).

These were estimated based on results from the consumer survey and third-party data sources on Russia's Internet population. Full details of the estimate for each benefit, and the data sources and assumptions used to derive each are shown below. The sum of these benefits was reflected as the total annual consumer benefits, based on the year 2021. All estimates were made based on the latest available annual data at time of the research in April 2021, i.e., in 2021 or in a 12-month period between 2020 and 2021.

BUSINESS BENEFITS

The business benefits supported by Google include the gross revenue, export revenue, income or savings generated by businesses from using Google products and from the BusinessClass program. These benefits do not include the flow-on economic effects generated, such as further purchases from their suppliers or the economic activity generated by the employees of these businesses who spend their wages in the broader economy. These benefits also do not account for activity that may have been displaced by Google, nor attempt to estimate the incremental impact of Google on the Russian economy beyond what would be the case if Google did not exist but other companies like it did. Exhibit A3 summarizes the methodology used for sizing the business benefits of Google's products. Exhibit A4 summarizes the methodology used for sizing the business benefits of the BusinessClass program.

Exhibit A3 Methodology for sizing business benefits from Google's products

Google Search & Google Ads

Net advertising benefits

Top-down

- Advertising revenue from Google Network Member's websites
- × Total spend on search ads
- × Google's share of search ads

Bottom-up

- Return on search ad spend
- × Google page views
- × % of pages with ads
- × Ads per page
- × Average click-through rate
- × Average cost-per-click

+

Google AdSense

Net advertising benefits

- Advertising revenue from Google Network Member's websites
- × Return on display ad spend
- × Russia's share of AdSense impressions

Income to website publishers

- Global traffic acquisition costs
- × Russia's share of AdSense impressions

+

YouTube

Net advertising benefits

- Total spend on online video ads
- × YouTube's share of online video ads
- × Return on YouTube ad spend

Revenue to content creators

- Total number of views of Russian YouTube channels
- × % views that watch ads
- × Average Cost-per- 1,000 impressions
- × Content creator revenue share

+

Google Play

Revenue to Russian developers from overseas markets

- Global consumer spending on Google Play apps
- × Share of global revenue that goes to the country's developers
- × Share of revenue that is paid out to developers
- × Consumer spending as % of total app revenue
- × Revenue to Russian developers from domestic market

Revenue to Russian developers to overseas markets

- Total size of Google Play revenue in the Russian market
- × % of Google Play revenue generated in Russia that comes from Russian apps

+

Use of Google Search by employees

Time savings gained due to Search

- Time saved per search
- × Number of searches for work per individual per year
- × % of searches used for work purposes

Note: This report's methodology for measuring Google's economic impact is consistent with the methodology used in our past Google Economic Impact reports

Exhibit A4

Methodology for sizing business benefits from Google's BusinessClass program

Note: This methodology is consistent with PwC's past methodology used to size the economic impact of the BusinessClass programme as shared by Google and in past press releases of impact figures. Examples of publicized press releases include Sberbank (2021), "BusinessClass training program for entrepreneurs by Sber and Google presented in Kemerovo Region." Available at: https://www.sberbank.com/news-and-media/press-releases/article?newsID=b0b78eb1-cf89-4b1e-a8f7-a4efc11c78a4&blockID=7&regionID=77&lang=en&type=NEWS

GOOGLE SEARCH AND GOOGLE ADS

The business benefits of Google Search and Google Ads were estimated using two methods – a top-down approach and a bottom-up approach. The top-down approach estimated the total size of the search advertising segment in the country and the proportion of this space that Google represents. The bottom-up approach estimated the number of Google searches conducted in the country, the proportion of searches with advertisements, the number of advertisements per search, the average click-through rate (CTR), and the average cost-per-click (CPC).

To estimate the income generated by businesses paying for online advertising through Google a return on investment (ROI) ratio range of 3.4 – 8 was applied, and both estimates were reported.[151] This ROI ratio was developed from a few assumptions:

- Using a large sample of proprietary data, Hal Varian, Google's Chief Economist, estimated that businesses received USD2 in revenue for every USD1 spent on advertising. This finding was published in the American Economic Review in 2009.
- Businesses also receive free clicks because of unpaid Google Search. Using research published in the International Journal of Internet Marketing and Advertising in 2009 by Jansen and Spink, the Google US Economic Impact Study assumed that businesses receive five clicks for every click on a paid advertisement.
- Unpaid clicks are not considered as commercially valuable, so the US Economic Impact Study assumed their value at 70 percent of paid clicks.
- Because of these assumptions, an ROI ratio of 8 was estimated. This ROI ratio was taken as an upper bound. To derive a lower bound, we built on the academic findings detailed in the Google UK Economic Impact Study to set a lower bound of 3.4.

Table 1 shows the inputs and sources used for estimating the business benefits of Google Search and Google Ads.

Table 1 Inputs and sources for calculating business benefits of Google Search and Google Ads

Approach	Metric	Source
Top-down approach	Total market expenditure on search advertising	• Statista (2020)[159]
	Google Search's market share	• StatCounter (2020)[158]
	Annual page views (browser)	• Data Reportal (2021)[157]
Bottom-up approach	Percentage of pages that display advertisements	• Varian (2009) , Jansen & Spink (2009)[158] • Deloitte (2015)[159]
	Advertisements per page on average	• Varian (2009) , Jansen & Spink (2009)[160] • Deloitte (2015)[161]
	CTR for Search (Estimate)	• BannerTag (2020)[162]
	Average CPC for Search (Estimate)	• Word Stream (2021)[163] • Word Stream (2018[164]
Both Methods	ROI ratio Lower and Upper Bound	• Varian (2009) , Jansen & Spink (2009)[165] • Deloitte (2015)[166]

151. ROI reflects the net advertising benefits that businesses receive from online advertising (i.e., total revenue minus online advertising cost).
152. Statista (2020), "Search advertising – Russia". Available at: https://www.statista.com/outlook/dmo/digital-advertising/search-advertising/russia
153. StatCounter (2020), "Search engine market share Russia". Available at: https://gs.statcounter.com/search-engine-market-share/all/russian-federation/#yearly-2020-2020-bar
154. DataReportal (2021) "*DIGITAL 2021: THE RUSSIAN FEDERATION*." Available at: https://datareportal.com/reports/digital-2021-russian-federation
155. Varian, H. R. (2009), "Online Ad Auctions". *The American* Economic Review, *Vol. 99, No. 2, pp. 430-434.*
156. Jansen, B. J., & Spink, A. (2009), "Investigating customer click through behaviour with integrated sponsored and non-sponsored results." *International Journal of Internet Marketing and Advertising*, Vol. 5, No. 1-2, pp. 74-94.
157. Deloitte (2015), *Google's Economic Impact United Kingdom.*
158. Varian, H. R. (2009), "Online Ad Auctions". *The American Economic Review*, Vol. 99, No. 2, pp. 430-434.
159. Jansen, B. J., & Spink, A. (2009), "Investigating customer click through behaviour with integrated sponsored and non-sponsored results." *International Journal of Internet Marketing and Advertising*, Vol. 5, No. 1-2, pp. 74-94.
160. Deloitte (2015), *Google's Economic Impact United Kingdom.*
161. Karlštrems, A. (2020), "Google AdSense CPM Rates 2020". *BannerTag*. Available at: https://www.bannertag.com/google-adsense-cpm-rates-2020/
162. Shewan, D. (2021) "How Much Does Google Ads Cost? [2021]." *Word Stream*. Available at: https://www.wordstream.com/blog/ws/2015/05/21/how-much-does-adwords-cost
163. Irvine, M. (2018), "Average Cost per Click by Country: Where in the World Are the Highest CPCs?" *Word Stream*. Available at: http://www.wordstream.com/blog/ws/2015/07/06/average-cost-per-click
164. Varian, H. R. (2009), "Online Ad Auctions". *The American Economic Review, Vol. 99, No. 2, pp. 430-434.*
165. Jansen, B. J., & Spink, A. (2009), "Investigating customer click through behaviour with integrated sponsored and non-sponsored results." *International Journal of Internet Marketing and Advertising, Vol. 5, No. 1-2, pp. 74-94.*
166. Deloitte (2015), *Google's Economic Impact United Kingdom.*

GOOGLE ADSENSE

The direct business benefits from Google AdSense were estimated as the net advertising benefits generated by businesses placing advertisements on publisher sites such as websites, blogs, and forums.[167] We estimated this figure using Google's published global advertising revenue from Google network's websites and multiplied this by the country's share of global Google AdSense impressions.[168] In addition, we applied an ROI ratio that advertisers earn using display advertising, derived from academic literature.

The benefits of Google AdSense to content creators were also estimated as the total income that they earn from placing advertisements sourced through Google Ads next to content on their website. The total income earned by the country's content creators was estimated from Google's global payments to website publishers, also known as their traffic acquisition costs, and applying the country's share of Google AdSense impressions to estimate the payments specific to the country.

Table 2 shows the inputs and sources used for estimating the business benefits of Google AdSense.

Table 2 **Inputs and sources for calculating business benefits of Google AdSense**

Estimation	Metric	Source
Net advertising benefits for advertisers	Advertising revenue from Google Network Member's websites	• Alphabet (2021)[169]
	ROI ratio	• Gupta et al. (2015) [170]
Revenue to content creators	Global traffic acquisition costs related to Google AdSense	• Alphabet (2021) [171]
Both estimates	Country share of global impressions on Google AdSense (Estimate)	• DoubleClick (2012) [172] • Google AdSense (2012) [173]

167. This refers to the increase in revenues and sales that can be directly attributed to advertising minus the related advertising expenditure.
168. This methodology does not account for price differences across countries due to the lack of availability of reliable data on cost per impression by country.
169. Alphabet (2019). Form 10-K for fiscal year ended December 31, 2020 - Submission to US SEC. Available at: https://abc.xyz/investor/static/pdf/20210203_alphabet_10K.pdf?cache=b44182d
170. Gupta, S., Pauwels, K., & Kireyev, P. (2015), Do display ads influence search? Attribution and dynamics in online advertising. International Journal of Research in Marketing.
171. Alphabet (2019). *Form 10-K for fiscal year ended December 31, 2020 - Submission to US SEC.* Available at: https://abc.xyz/investor/static/pdf/20210203_alphabet_10K.pdf?cache=b44182d
172. Google DoubleClick (2012). *What's trending in display for publishers?*. Available at: https://www.slideshare.net/RFONNIER/display-business-trends-publisher-edition-google-2012
173. Google AdSense (2012), "*New industry metrics to help publishers make the most from the web.*" Available at: https://adsense.googleblog.com/2012/05/new-industry-metrics-to-help-publishers.html

YOUTUBE

The direct business benefits from YouTube were estimated as the net advertising benefits generated by businesses placing video advertisements on YouTube.[174] We estimated this figure using Russia's total digital video advertising revenue and multiplied this by YouTube's share of Russia's total user base in the online video segment. In addition, we applied the relevant ROI ratio that advertisers earn using video advertising, derived from public sources.

The incomes earned by content creators were also estimated based on the total income earned from advertisements placed on their YouTube channels. We estimated this figure by multiplying the total views garnered by Russian YouTube channels by the percentage of views that skip advertisements, and then further multiplying it by the average earnings per view in Russia. We then derived the income that goes to content creators by multiplying the agreed revenue share between YouTube and content creators.

Table 3 shows the inputs and sources used for estimating the business benefits of YouTube.

Table 3 Inputs and sources for calculating business benefits of YouTube

Estimation	Metric	Source
Net advertising benefits for advertisers	Total market revenue from digital video advertising	· Statista (2021)[175]
	YouTube's share of the total user base in Russia's online video segment	· AlphaBeta Consumer Survey (2021)
	YouTube ads ROI Lower and Upper bound	· Business Insider (2016)[176]
Income to content creators	Total number of views on Russian YouTube channels	· Social Blade (2021)[177]
	Percentage of views that watch ads	· Magna Global (2018)[178]
	Average cost-per-thousand impressions	· Banner Tag (2020)[179]
	Content creator revenue share	· Investopedia (2020)[180]

175. Statista (2020). "*Video Advertising*." Available at: https://www.statista.com/outlook/dmo/digital-advertising/video-advertising/russia#ad-spending
176. Business Insider (2016), "Google attacks TV, saying YouTube ads generate a better return on investment most of the time." Available at: https://www.businessinsider.com/youtube-ads-have-better-roi-than-tv-according-to-google-2016-4?r=US&IR=T#MsIV5iuGTZ7dGj72.97
177. Social Blade (2021). "*Top 100 YouTubers in Russian Federation sorted by video views*." Available at: https://socialblade.com/youtube/top/country/ru/mostviewed
178. Magna Global (2018), "Skipping around the world." Available at: https://magnaglobal.com/wp-content/uploads/2018/05/Magna-IPG-Lab-Skipping-Around-the-World.pdf
179. Karlštrems, A. (2020), "YouTube Video CPM Rates 2020." *Banner Tag*. Available at: https://www.bannertag.com/youtube-video-cpm-rates-2020/
180. Rosenberg, E. (2020), "How YouTube Ad Revenue Works." *Investopedia*. Available at: https://www.investopedia.com/articles/personal-finance/032615/how-youtube-ad-revenue-works.asp

GOOGLE PLAY

The direct business benefits generated by Google Play were estimated by deriving the revenue generated by app developers in Russia from their apps. This revenue was broken down into revenue earned from the domestic market (i.e., Russia), and revenue earned from foreign markets. To estimate the revenue earned from foreign markets, the revenue earned by app developers in Russia globally was first estimated, and the revenue earned from the domestic market was then subtracted from this global value.

To estimate the revenue earned through Google Play globally, we multiplied global consumer spending on Google Play by the share of the spending that is paid out to app developers, and then further by the share of the spending that goes to app developers in Russia. This amount was then scaled up to include advertising revenue from apps in Google Play, using estimates of the breakdown of total app revenue between consumer spending on apps (including paid app downloads and in-app purchasing) and advertising.

To estimate the revenue earned through Google Play in the domestic market, we multiplied the total Google Play revenue earned from the domestic market by the share of this revenue that goes to app developers in the country. This share was proxied based on the share of the earnings from the top 200 grossing apps in the Russian market that come from domestically developed apps. This share was estimated using the "power-law" method used to capture the relative value of apps in the absence of individual app data on revenue. We used a simple power-law coefficient of -1, which implies that apps decrease in relative value the lower they are ranked. This means that the top ranked app has a relative weight of 1, the second rank has a value of 1/2, the third rank 1/3, fourth 1/4, and so on.

Table 4 shows the inputs and sources used for estimating the business benefits of Google Play.

Table 4 **Inputs and sources for calculating business benefits of Google AdSense**

Estimation	Metric	Source
Revenue to Russian developers from foreign markets	Global consumer spending on Google Play	· Sensor Tower (2021) [181]
	Share of the spending that goes to the country's app developers	· Caribou Digital (2016)[182]
	Share of the spending that is paid out to app developers	· Google (2020)[183]
	Distribution of mobile app revenue between consumer spending and ads	·Appota/ AdSota (2017)[184]
Revenue to content creators	Total size of Google Play revenue in the Russian market	· SensorTower (2020)[185]
	% share of Google Play revenue generated in Russia that comes from Russian apps	· Similar Web (2021) [186]

181. Sensor Tower (2021), "Global Consumer Spending in Mobile Apps Reached a Record $111 Billion in 2020, Up 30% from 2019". Available at: https://sensortower.com/blog/app-revenue-and-downloads-2020
182. Caribou Digital (2016), *Winners and Losers in the Global App Economy.* Available at: https://www.cariboudigital.net/wp-content/uploads/2016/02/Caribou-Digital-Winners-and-Losers-in-the-Global-App-Economy-2016.pdf
183. Google (2020). Available at: https://support.google.com/googleplay/android-developer/answer/112622?hl=en
184. AdSota (2017), *Vietnam Mobile App Advertising and Monetization Report (Q2-2017).* Available at: https://www.slideshare.net/AdsotaAds/vietnam-mobile-app-advertising-monetization-report?qid=3ab11c21-44c9-4fbb-9cb4-41b57d471f3c&v=&b=&from_search=7
185. SensorTower (2020), "European Mobile App Consumer Spending Grew 19% in 2019 to More Than $11 Billion." Available at: https://sensortower.com/blog/europe-app-revenue-and-downloads-2019
186. Similar Web (2021), "*Top 200 Grossing Apps in Russia.*"

BUSINESSCLASS PROGRAM

The methodology used to derive the business benefits generated by the BusinessClass program (jointly launched by Google and Sberbank) is based on a previously developed PwC methodology. The total revenue benefits were estimated by deriving the revenue generated by new businesses that were launched by participating entrepreneurs and additional revenue generated by participating SMBs of the program. The total number of jobs created by BusinessClass was estimated by deriving the number of jobs that were created by new businesses that were launched by participating entrepreneurs and additional employment generated by participating SMBs of the program. The total additional tax revenue was estimated by multiplying the total revenue benefits with the average tax rate faced by SMBs in Russia.

To estimate the revenue generated by new businesses, we first estimated the total number of new businesses launched with the help of BusinessClass. This was derived by multiplying the number of total participants of the BusinessClass program (as of April 2021) with the share of participants who were entrepreneurs, and the share of participating entrepreneurs who launched new businesses. This figure was then multiplied with the average annual revenue of SMBs in Russia, as estimated based on national statistical figures from Rosstat. To estimate the additional revenue generated by participating SMBs, we first estimated the total number of SMBs that increased their revenue with the help of BusinessClass. This was derived by multiplying the number of total participants of the BusinessClass program (as of April 2021) with the share of participants who were SMBs, and the share of participating SMBs that experienced an increase of revenue. This figure was then multiplied with the average revenue of SMBs in Russia, as estimated based on national statistical figures from Rosstat, and the average percentage revenue increase of participating SMBs.

To estimate the number of jobs generated by new businesses, we multiplied the number of newly launched businesses, as calculated above, with the average number of employees per SMB in Russia, as estimated based on national statistical figures from Rosstat. To estimate the number of additional jobs generated by participating SMBs, we multiplied the number of participating SMBs, as calculated above, with the share of participating SMBs that generated additional employment with the help of BusinessClass, and with the average additional employment generated by each of these SMBs.

Table 5 shows the inputs and sources used for estimating the business benefits of the BusinessClass program.

Table 5 Inputs and sources for calculating business benefits of BusinessClass

Estimation	Metric	Source
Revenue generated by new businesses	Number of trained participants in BusinessClass	• Google (2021)
	Percentage of participants who are new entrepreneurs	• Google (2021)
	Percentage of participating new entrepreneurs who launched a new business	• Google (2021)
	Average annual revenue per SMB in Russia	• Rosstat (2021)[187]
Additional revenue generated by participating SMBs	Number of trained participants in BusinessClass	• Google (2021)
	Percentage of participants who are SMBs	• Google (2021)
	Percentage of participating SMBs that increased their revenue due to BusinessClass	• Google (2021)
	Average annual revenue per SMB in Russia	• Google (2021)
	Number of trained participants in BusinessClass	• Google (2021)
	Average percentage revenue increase per participating SMB	• Rosstat (2021)[188]
Jobs generated by new businesses	Number of trained participants in BusinessClass	• Google (2021)
	Percentage of participants who are new entrepreneurs	• Google (2021)
	Percentage of participating new entrepreneurs who launched a new business	• Google (2021)
	Average number of employees per SMB in Russia	• Rosstat (2021)[189]
Additional jobs generated by participating SMBs	Percentage of participants who are SMBs	• Google (2021)
	Percentage of participating SMBs that increased their employment due to BusinessClass	• Google (2021)
	Average number of additional employment generated by SMBs that increased their employment	• Google (2021)
Additional tax revenues generated by BusinessClass	Average tax revenue in Russia	• Google (2021)

187. Rosstat (2019), *Small and medium business in Russia.* Available at: https://rosstat.gov.ru/folder/210/document/13223
188. Rosstat (2019), *Small and medium business in Russia.* Available at: https://rosstat.gov.ru/folder/210/document/13223
189. Rosstat (2019), *Small and medium business in Russia.* Available at: https://rosstat.gov.ru/folder/210/document/13223

GOOGLE SEARCH (TIME SAVINGS)

We estimated the time saving benefits that businesses gained from using Google Search based on the amount of time saved per search, the number of searches conducted per worker, and the share of searches that were conducted cc for work purposes.

Table 6 Inputs and sources for calculating time saving benefits of google search

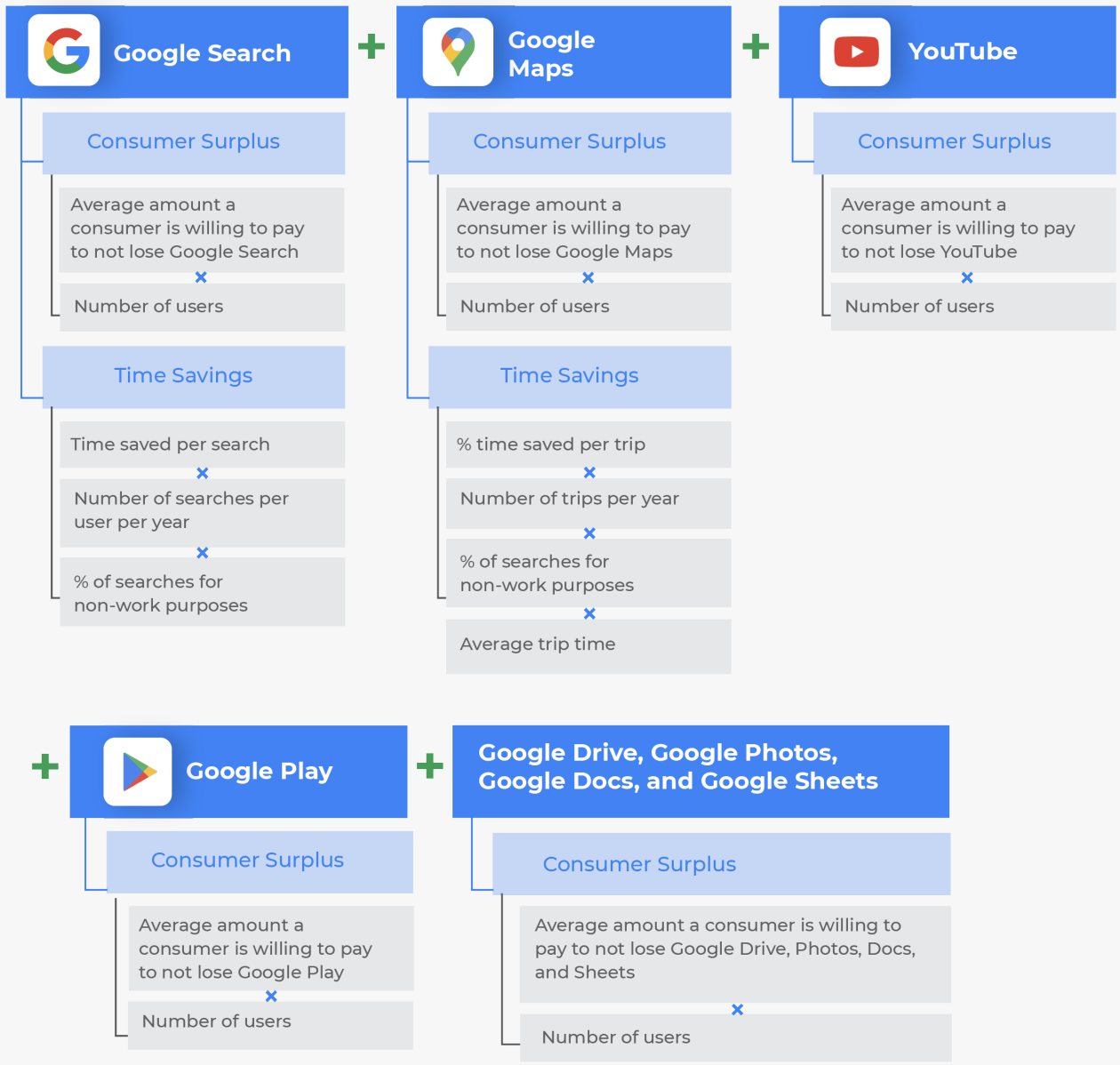
Metric	Source
Time saved per search	• Varian (2014)[190] • Chen et al. (2014)[191]
Average daily searches per worker	• AlphaBeta Consumer Survey (2021)
% of searches for work purposes	• AlphaBeta Consumer Survey (2021)

190. Hal Varian (2014), "Economic value of Google" (Presentation). Available at: http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf
191. Chen, Y., YoungJoo Jeon, G., & Kim, Y.-M. (2014), "A day without a search engine: an experimental study of online and offline searches". *Experimental Economics, Vol 17, Issue 4, pp 512-536*

CONSUMER BENEFITS

The consumer benefits supported by Google are challenging to measure and calculate because individuals typically do not pay for the services. In the absence of price indicators, we adopted the economic "willingness to pay" principle to estimate the value of consumer benefits by asking individuals how much they value specific products – also known as consumer surplus. We also calculated the time savings accrued to consumers from their use of Google Search (which increases the efficiency of information gathering). Exhibit A4 summarizes the methodology used for sizing consumer surplus and time savings of relevant products.

EXHIBIT A4 Methodology for sizing consumer benefits from Google's products



SOURCE: AlphaBeta analysis

GOOGLE SEARCH

We estimated the benefits of Google Search to consumers using two metrics: consumer surplus and time savings.

To calculate the consumer surplus for Google Search, we multiplied the number of Google Search users with the average willingness to pay obtained from the consumer survey.

To calculate time savings, we applied time saving estimates from an experiment that measured the time taken to conduct a search online versus a search at the library.[192] This study found that a search that takes 21 minutes in the library takes 7 minutes online. After accounting for the fact that people now ask more questions due to the ease of online search, we estimated the time saved across the country by using Google Search.

The share of Google Search users in the country who have made use of Google Search for self-enrichment purposes such as learning new skills or acquiring knowledge in a new topic was also estimated using the consumer survey.

Table 7 shows the inputs and sources used for calculating the consumer benefits of Google Search.

Table 7 **Inputs and sources for calculating consumer benefits of Google Search**

Estimation	Metric	Source
Consumer surplus	Amount that consumers value product per year (WTP)	· AlphaBeta Consumer Survey (2021)
	Online Population (OP)	· Statista (2020) [193]
	Search users as % of OP	· AlphaBeta Consumer Survey (2021)
Time saved per user	Time saved per search	· Varian (2014) [194] · Chen et al. (2014) [195]
	Average daily searches per user	· AlphaBeta Consumer Survey (2021)
	% of searches for non-work purposes	· AlphaBeta Consumer Survey (2021)
Share of Search users who have made use of Search for self-enrichment purposes	% of Search users in country who made use of Search for self-enrichment purposes	· AlphaBeta Consumer Survey (2021)

193. Statista (2020), "Number of internet users in selected Central and Eastern European countries in 2020". Available at: https://www.statista.com/statistics/1134029/internet-audiences-in-cee-region/
194. Hal Varian (2014), "Economic value of Google" (Presentation). Available at: http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf
195. Chen, Y., YoungJoo Jeon, G., & Kim, Y.-M. (2014), "A day without a search engine: an experimental study of online and offline searches". *Experimental Economics, Vol 17, Issue 4, pp 512-536.*

GOOGLE MAPS

We sized the benefits of Google Maps to consumers using willingness to pay, where consumers were asked to value their favorite online maps service. To calculate the consumer surplus for Google Maps, we multiplied the number of Google Maps users with the average willingness to pay obtained from the consumer survey.

Table 8 shows the inputs and sources used for calculating the consumer benefits of Google Maps.

Table 8 Inputs and sources for calculating consumer benefits of Google Maps

Estimation	Metric	Source
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2021)
	Online Population (OP)	• Statista (2020) [196]
	Maps users as % of OP	• AlphaBeta Consumer Survey (2021)

YOUTUBE

We calculated the benefits of YouTube to consumers using willingness to pay, where consumers were asked to value services in the online video segment. Results from the survey of the country's online population were used.

The share of YouTube users in the country who have made use of YouTube for self-enrichment purposes such as learning new digital skills was also estimated using the consumer survey.

Table 9 shows the inputs and sources used for calculating the consumer benefits of YouTube.

Table 9 Inputs and sources for calculating consumer benefits of YouTube

Estimation	Metric	Source
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2021)
	Online Population (OP)	• Statista (2020) [197]
	YouTube users as % of OP	• AlphaBeta Consumer Survey (2021)
Share of YouTube users who have made use of YouTube for learning digital skills	% of YouTube users in country who made use of YouTube for learning digital skills	• AlphaBeta Consumer Survey (2021)

196. Statista (2020), "Number of internet users in selected Central and Eastern European countries in 2020". Available at: https://www.statista.com/statistics/1134029/internet-audiences-in-cee-region/
197. Statista (2020), "Number of internet users in selected Central and Eastern European countries in 2020". Available at: https://www.statista.com/statistics/1134029/internet-audiences-in-cee-region/

GOOGLE PLAY

We calculated the benefits of Google Play to consumers using willingness to pay, where consumers were asked to value their favorite online distribution platform for digital products. Results from the survey of the country's online population were used.

Table 10 shows the inputs and sources used for calculating the consumer benefits of Google Play.

Table 10 Inputs and sources for calculating consumer benefits of Google Play

Estimation	Metric	Source
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2021)
	Online Population (OP)	• Statista (2020) [198]
	Google Play users as % of OP	• AlphaBeta Consumer Survey (2021)

GOOGLE DRIVE, GOOGLE PHOTOS, GOOGLE DOCS, AND GOOGLE SHEETS

We calculated the benefits of Google Drive, Google Photos, Google Docs, and Google Sheets to consumers using willingness to pay, where consumers were asked to value their favorite online cloud-based file storage and document collaboration service. Results from the survey of the country online population were used.

Table 11 shows the inputs and sources used for calculating the consumer benefits of Google Drive, Google Photos, Google Docs, and Google Sheets.

Table 11 Inputs and sources for calculating consumer benefits of Google Drive, Google Photos, Google Docs, and Google Sheets

Estimation	Metric	Source
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2021)
	Online Population (OP)	• Statista (2020) [199]
	Google Drive, Google Photos, Google Docs, and Google Sheets users as % of OP	• AlphaBeta Consumer Survey (2021)

198. Statista (2020), "Number of internet users in selected Central and Eastern European countries in 2020". Available at: https://www.statista.com/statistics/1134029/internet-audiences-in-cee-region/
199. Statista (2020), "Number of internet users in selected Central and Eastern European countries in 2020". Available at: https://www.statista.com/statistics/1134029/internet-audiences-in-cee-region/

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