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The Freelance Labor Market in COVID-19 Conditions

Desk Study

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Supported by United Nations Development Programme

Yerevan, 2020

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Preface

Since the outbreak of the COVID-19¹ virus, almost all countries began experiencing economic hardships resulting from the shutdown of a wide range of economic activity, especially in a wide range of businesses in the tourism industry. Armenia is not an exception. The pre-pandemic high unemployment rate in country has further soared considering that not all types of businesses can function with work-from-home. Both businesses and individuals are facing an unprecedented situation of economic hardships. However, several sectors are experiencing an expansion of operations since the spread of the virus has created greater demand for the types of services and work they provide in a COVID-19 imposed world.

This research aims to explore the freelance labor market to identify changes in demand in the period following the outbreak of COVID-19 particularly for work associated with the following: i) occupations that are in higher demand imposed by the virus; ii) skilled freelance service providers in the COVID-19 reality; iii) new freelance work opportunities in occupations or services not traditionally performed or provided remotely. The research examines several of the most popular freelance platforms, provides a brief review of each, and maps the opportunities available to freelancers based in Armenia.

Methodology

The study uses desk research of data from three sources, as follows:

1. Secondary research: In this phase, a meta-analysis was performed of secondary sources, comprising articles, reports, and published expert opinions on the types of in-demand jobs in response to COVID-19. The data analyzed primarily touch upon jobs now in demand in the international market.
2. Online desk research: Here, the analysis involved data collected from several of the most popular freelance platforms, primarily to identify
 - ✓ highly sought occupations in the freelance market since the beginning of the conditions created by the COVID-19 pandemic;
 - ✓ skills that are in high demand in those circumstances; and
 - ✓ opportunities in other occupations that are performed remotely.
3. Interviews: In this phase, semi-structured interviews were conducted remotely with a sample of five freelancers/remote job holders residing in Armenia,² in order
 - ✓ to validate the findings from the earlier desk research
 - ✓ to add deeper insight into the subject matter as experienced by working individuals

¹ More information about COVID-19 and international measures; Coronavirus. (n.d.). WHO | World Health Organization. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.

² The sample of interviews is not representative. It provides observations of several freelance professionals.

Findings

Below are the findings from all three phases of data collection and analysis shown in the earlier section. The results are organized into several categories shown below under corresponding subheadings; occupations in demand since the outbreak of the COVID-19 pandemic, most demanded COVID-19 situational jobs in the freelance market, most demanded professions and skills in freelance job market during COVID-19 reality, the most demanded occupations in the freelance market, generally and freelance opportunities for other professions.

Occupations in demand since the outbreak of the COVID-19 pandemic

This section identifies the occupations in demand since the outbreak of the virus, including those performed remotely or requiring physical presence.

According to the Economic Research Report recently published by a popular job-posting website, Glassdoor, in prevailing COVID-19 conditions, there is an increased demand for *communication specialists, researchers, and medical assistants*. With the extent of virality of COVID-19, *data specialists* are sought primarily to collect and analyze large quantities of data related to the virus and its impact, *researchers and scientists* (mostly microbiologists) for discovering information about the outbreak, testing and reviewing lab data, and *communication specialists* to share information about various aspects of the virus and educate populations.³

According to several analyses, other businesses that have experienced an increase in demand are *grocery stores, suppliers of healthcare products, as well as shipping and delivery services*. Case in point, Amazon announced adding 100,000 jobs to be able to meet the increased demand of online shoppers.⁴

Companies providing various sorts of *technology platforms* also have experienced a real boom in demand for their systems and services considering that many businesses have had to quickly adjust to move work online in the COVID-19 imposed shut downs. Several platforms have experienced unprecedented increases in online meetings using Zoom, Slack, and Microsoft Team, which have driven new job openings in those communication platforms.⁵

Also, with the quarantine and stay-at-home policies and executive orders, there is an increase in demand for *digital entertainment, streaming services* and *video games*. Moreover, demand for *online learning companies* also has increased. Case in point, Outschool.com has announced thousands of open positions for *teachers* to meet the increasing demand.⁶

³ Coronavirus outbreak: How employers & employees are responding. (2020, April 3). Glassdoor Economic Research.

<https://www.glassdoor.com/research/coronavirus-employer-employee-response/>
COVID-19: Job market insights & job search strategies from experts. (2020, May 4). Cultivated Culture.

<https://cultivatedculture.com/covid19-job-market-insights/>

⁴ Coronavirus jobs put workers on front lines of epidemic. (2020, March 21). Time. <https://time.com/5807686/coronavirus-jobs/>.

Segran, E. (2020, March 17). How do you practice social distancing in an Amazon warehouse? Fast Company.

<https://www.fastcompany.com/90478317/how-do-you-practice-social-distancing-in-an-amazon-warehouse>

Borland, J. (2020, March 26). Which jobs are most at risk from the coronavirus shutdown? The Conversation.

<https://theconversation.com/which-jobs-are-most-at-risk-from-the-coronavirus-shutdown-134680>

⁵ COVID-19: Job market insights & job search strategies from experts. (2020, May 4). Cultivated Culture.

<https://cultivatedculture.com/covid19-job-market-insights/>

Cohen, A. (2020, March 18). Who is hiring during the coronavirus? Try these industries if you need a job now. Fast Company.

<https://www.fastcompany.com/90478987/who-is-hiring-during-the-coronavirus-try-these-industries-if-you-need-a-job-now>

Stahl, A. (2020, April 1). 4 industries that are still hiring in the midst of COVID-19. Forbes.

<https://www.forbes.com/sites/ashleystahl/2020/04/01/4-industries-who-are-still-hiring-in-the-midst-of-covid-19/#1fe60f0915ee>

⁶ COVID-19: Job market insights & job search strategies from experts. (2020, May 4). Cultivated Culture.

<https://cultivatedculture.com/covid19-job-market-insights/>

COVID-19 and digitalisation: 4 areas of tech set to boom post-pandemic. (2020, March 31). Information Age.

<https://www.information-age.com/covid-19-digitalisation-tech-boom-post-pandemic-123488670/>

Many of the above-listed services are provided remotely from any place in the world. As HR thought leader, Jon Younger puts it, “*belief in the long-term future for freelancers and independent management consultants is bright.*”⁷ According to the leadership of such freelance platforms as Catalant, Kolabtree, Fiverr and WeareRosie, additional human resources in *operations*, and *management consulting*, including professionals in *project management*, *finance*, and *marketing professionals* are currently highly demanded in the remote labor market. Demand for *communications experts*, *epidemiologists* and *COVID related researchers* are also on the rise.⁸

Based on the findings from the analysis of the secondary sources examined, the companies that reported to have a large number of job openings are presented in Table 1, along with corresponding job opportunities across professions. Table 1 depicts available positions in Amazon, Zoom, Slack and Microsoft as at April 1, 2020.

Table 1: Job openings as at April 1, 2020

Company	Job openings
Zoom,	Data engineers
Slack	Data scientists
	Product analytics
	Customer success managers
	Technical account managers
	Learning consultants
	Learning experience designers
	Technical supporters
	Technical project managers
	App integration engineers
	Cloud operation engineers
	Developer advocates
	Software engineers
	Android, iOS developers
	Cloud engineers
	Assistants
	Business analysts
	Sales
	Solution architects,
	Sales analytics
Microsoft	Software engineers
Amazon	Customer service associates, Technical support associates
	Accounting managers
	Revenue accountants
	Tax analysts
	Financial system analysts
	Auditors
	IT support analysts
	System administrators
	Business Development representatives
	Value consultants
	Product managers
	eCommerce campaign managers
	E-mail marketing managers
	Product marketing managers
	Project managers
	Product designers
	Content designers
	Visual designers
	Recruiters, headhunters,
	Technical recruiters
	Public relations managers
	Brand producers
	Channel managers
	Account managers
	Account executives
	Enterprise sales manager
	Online account executive
	Sales operations,
	Sales managers
	Product Managers
	Digital Devices Support Associates

Sources: Amazon's global career, Microsoft Jobs; Careers at Microsoft, Remote Zoom jobs, Careers/Slack websites

⁷ Younger, J. (2020, March 20). 21 gig economy leaders share how the coronavirus pandemic is impacting the freelance workforce. Forbes. <https://www.forbes.com/sites/jonyounger/2020/03/20/update-how-coronavirus-is-impacting-freelancers-and-gigsters-now-today-march-20/#702dc7c74a03>

Younger, J. (2020, March 30). The coronavirus pandemic is driving huge growth in remote freelance work. Forbes. <https://www.forbes.com/sites/jonyounger/2020/03/29/this-pandemic-is-driving-huge-growth-in-remote-freelance-work/#1383e3507747>

⁸ Younger, J. (2020, March 20). 21 gig economy leaders share how the coronavirus pandemic is impacting the freelance workforce. Forbes. <https://www.forbes.com/sites/jonyounger/2020/03/20/update-how-coronavirus-is-impacting-freelancers-and-gigsters-now-today-march-20/#702dc7c74a03>

Not all current job openings in the identified companies have remote opportunities, but as all large companies have a track record in recruiting freelancers, the search for the jobs currently in high demand also includes freelancers.

Most demanded COVID-19 situational jobs in the freelance market

In order to identify the most demanded jobs related to or influenced by the virus in the international freelance market, top five freelance websites + one for scientific jobs were explored. A search was conducted with the keyword “*Covid-19*” to survey the demand for jobs causally related to the outbreak.

Upwork.com, Freelancer.com, PeoplePerhour.com, Aquent.com, Guru.com and Kolabtree.com for scientific jobs were examined.

The findings are depicted below.

- ***Software developers and designers***, particularly ***graphic designers*** were found to be the most demanded COVID-19 driven situational professions in the freelance market. The principal openings were for services directly related to creating/managing virus-related informational websites and applications, designing info graphics, flyers, brochures, etc. **Product design** also was found to be in demand mainly for COVID-19 related products, such as masks and shields. However, the need for web design and maintenance services also was visibly evident because of the impact of COVID-19 on business operations, considering that many businesses, which did not have online presence before decided to quickly change their modes of operation to enter online markets.
- There is also a relatively high demand for ***writing services***, including ***copywriters and bloggers***, primarily for developing COVID-19-related content, including articles and other informative papers. Moreover, there is an increase in demand for copywriters in different businesses that are striving to launch or strengthen online operating capacity.
- ***Data specialists*** and ***multimedia specialists*** are also in demand, mainly in data related fields associated with the pandemic, such as production of videos and animation products on COVID-19, its impact or other business purposes. An equal degree of demand exists for ***marketing specialists***, especially ***digital marketers*** with a focus on ***social media marketing***. The objective of those businesses looking for marketing professionals are directed to promoting COVID-19, as well as to rolling entry into online markets to recapture lost business.
- There is also demand for professionals in ***sales, business analysts, researchers, managers and virtual assistants***. Again, those are both directly related to COVID-19, such as sales agents and business analysts for COVID-19 supplies development, sales and related to other businesses.
- Demand for freelance ***epidemiologists*** and ***microbiologists*** is also evident, primarily in research, content development, consulting, and teaching related to COVID-19.⁹ See Table 2 and 3 below.

Table 2 shows the number of jobs that were found from the search. Table 3 shows the identified jobs in actual numbers.

⁹ Only in the case of epidemiologists and microbiologists the presented number represents the total number of available jobs in the six freelance portals. In the case of these professions, the search was conducted using the actual profession/occupation as keywords, in addition to COVID-19 keyword. The rest of the occupations were identified by the COVID-19 keyword only.

Table 2: Number of jobs found using COVID-19 as the search keyword, March 30-April 2, 2020.

Upwork¹⁰	484
Freelancer	129
Peopleperhour	33
Aquent	20
Guru	12
Kolabtree	1

Table 3: Jobs found from search of six freelance websites using COVID-19 as keyword, March 30-April 2, 2020.¹¹

Profession	N of cases
Research	15
Researcher	8
Political Researcher	1
Market Researcher	1
Business Researcher	3
Research Administrative Coordinator	1
UX Researcher	1
Data Specialization	18
Data Specialist	9
Database Developer	2
Data Scientist	7
Writing	32
Writer	14
Copywriters	12
Blogger	6
Software development	81
Software/Web developer	49
App Developer	32
Design	59
Graphic Designer	49
Web designer	10
Multimedia	19
Video producer/editor	17
Animator	2
Digital marketing	15
Social Media Marketing	10
Digital marketer	5
Marketing	9
Marketing strategist/consultant	7
Public Relations	2
Sales/Business	14
Sales agents	8
Business analyst/ consulting	6
Management	9
Project manager/coordinator	9
Virtual Assistance	9

¹⁰ Only 150 jobs were explored from Upwork because of time limitations¹¹ See reference 9.

Virtual assistant/administrator	9
Epidemiology & Microbiology	42
Epidemiologist	12
Microbiologist	30
Customer support	1
Finance	3

Source: Upwork.com, Freelancer.com, Peopleperhour.com, Guru.com, Aquent.com, Kolabtree.com

Thus, the findings show that the occupations that are in demand in response to COVID-19 are the same as those in the freelance job market; communication specialists, particularly marketing specialists; designers and multimedia specialists, researchers, data specialists, scientists, as well as management and sales specialists are in demand in the freelance market. The only profession that is claimed by the secondary sources examined to have become demanded in response to COVID-19 and is not found on the freelance platforms is medical assistant.

Most demanded occupations and skills in freelance job market during COVID-19 reality

This segment of the research surveys five popular freelance platforms¹² to measure current demand for freelancers in occupations presented in the previous segments, that i) have become demanded since the outbreak of the COVID-19 pandemic, ii) most demanded COVID-19 situational jobs in the freelance market. The skills required from freelancers is presented for each respective occupation.

Though the tables show the actual numbers of job announcements on the platforms surveyed, the skills in demand were collected by random sampling of job announcements. In this regard, 100-150 announcements were reviewed on four freelance platforms for each occupation.¹³ Considering the total number of announcements reviewed, it can be inferred that the skills identified represent the real picture with a confidence level of 95% and an 8% margin of error.

Thus, in reference to occupations in demand in the freelance labor market in the COVID-19-driven reality, the findings are as follows

— **Software and web development** is the most demanded; 23% of the job openings on the examined platforms look for freelance developers with knowledge and expertise in different programming languages and tools.

— **Graphic designers** are the second most demanded occupation in the freelance job market, particularly those skilled in graphic design and illustration software, such as Adobe Photoshop and Illustrator. **Product designers** are also sought with skills in 3D modelling.

— **Writers**, including **copywriters, bloggers, creative and fiction writers** are the third most wanted occupations in the freelance market. The primary skill sought for in this category is fluent knowledge of English and its various dialects or some other widely spoken language and a great talent for storytelling.

— **Web design services**, add up to web development and are much demanded in the market, skilled mostly in UX/UI design with knowledge of web design languages and software. Designers and writers cover 9-10% of the job announcements examined.

¹² Upwork.com, Freelancer.com, Guru.com, PeoplePerHour.com, Aquent.com,

¹³ Aquent.com is not included because of its low number of announcements.

— **Digital marketers, mobile App developers and Sales professionals** follow representing 5-6% of the freelance job market.

— **Video/Audio producers, Data specialists/scientists, IT and networking professionals and Virtual Assistants** are at a 3-4% of job announcements on freelance websites representing 3,000-5,000 job openings.

— **Animation/motion graphic specialists, general marketing specialists, Researchers and Project managers** come right after the virtual assistants covering 2,000- 3,000 announcements on the portals.

- **Customer service, accounting, management consulting, financial planning, human resources and eLearning designers** are also demanded in the remote job market but on a comparatively smaller scale; there are about 500 up to 1,600 job openings for these services on the platforms.

Interview with a Freelance Graphic Designer from Armenia

The interviewee currently works as a full-time freelance graphic designer on Upwork, only earning his monthly income from this freelance work. He had 20-25 years of experience in design before entering the freelance market.

“Though in the beginning it was really challenging, I was actively searching for a job on a freelance platform for two consecutive months, with zero offers. At the end of the 2nd month, at last, I received an offer with very low payment. Then, gradually by doing quality work and gaining good reviews from the clients, I reached to the point where freelancing brings me a stable income every month”.

According to the interviewee, the demand for graphic design services is very high in the freelance job market; however, the supply also is very high. Many freelancers, particularly those from India, offer their services at very low prices, which makes market very competitive. For new players, entry is very challenging. A designer, even one with extensive experience, should assume and accept that in the beginning s/he might have difficulty in finding jobs, even at lower remuneration.

From the perspective of this interviewee, freelance work offers the advantage of choosing when and from where to work; but, there also are disadvantages that result from working alone and not having the opportunity to communicate with others and learn from experience sharing .

According to the interviewee, the most essential skills needed to be successful as a graphic designer on freelance platforms is experience in the field, considering that there are certain skills that one learns only from experience; these include working with design software, such as Adobe Photoshop/Illustrator; Also, intermediate level knowledge of English since communication is mostly conducted in written form.

The interviewee noted that he has not observed any change (neither increase, nor decrease) in the number of jobs in the field of graphic design in connection with COVID-19. Instead, the nature of jobs has changed; now, clients are seeking designs for products related to the virus, relevant labels for alcohols, promotion posters, etc. The interviewee has not heard from some major clients following the COVID-19 outbreak, but has received new offers associated with the virus. Thus, the volume of work for the interviewee remained the same.

The interviewee suggested the newcomers in the field, *“to watch YouTube interviews of freelance graphic designers where they share their experience of how they built up their profile, what is effective pricing strategy etc. If professional training or mentoring opportunities are available, the freelancers should take them.”*

Finally, as it was stated earlier, **epidemiologists and microbiologists** also are considered to be very much in demand in the COVID-19-affected labor market, primarily for jobs directly connected with the virus. As to the remote market, though there are several freelance opportunities in the field of epidemiology and microbiology on the freelance platforms surveyed, they are fewer when compared with other types of jobs; 32 jobs in microbiology and 20 jobs in epidemiology. See Table 4 below.

Table 4: Job opportunities across occupations in freelance job market in COVID-19 reality, April 6- April 10, 2020

Service demanded/Job opportunity	Real numbers	% of total	Skills
Software/web development	31,606	23%	<p><i>Skilled in</i> Software Architecture & Design Full Stack Development Backend Development Frontend Development Ecommerce Development Databases Web servers Cloud computing platform CRM software</p> <p><u>Programming languages and techniques</u> Node.js, React, Gatsby.js, Angular, Vue.js, JavaScript, Nuxt.js, PHP, Ruby on Rails, Python, Django, Flask, Java, Kotlin, TypeScript, MySQL, SQLite, MongoDB, Microsoft SQL, PostgreSQL, CSS, Bootstrap, Laravel, TailWind, Spring Framework, Vuetify, HTML, HTML5, jQuery, CSS, CSS3, C++, C#, Ajax, RESTful, JSON</p>
Graphic design (including product and interior design)	14,269	10%	<p><i>Skilled in</i> Graphic design Illustration Data Visualization Digital Painting Drawing UI Graphics Editorial Design Digital Publications Design Marketing Consulting</p> <p><u>Graphic Design software</u> Adobe Illustrator Adobe Photoshop Adobe InDesign CorelDRAW Adobe Flash Finl Cut Pro</p>
			<p><u>Computing & eCommerce Platforms:</u> Amazon Web Services, API, GitHub, Shopify, Kubernetes, Magento, Drupal</p> <p><u>Software:</u> NGINX, Apache, Tomcat</p> <p><u>Product/Interior design</u> <i>Skilled in</i> 3D Modelling 3D Rendering 3D Animation, 2D Design 3D Design Materials Modeling Ergonomics Sketching Consulting</p> <p><u>Required Software</u> CAD/CAM Solidworks, 3D Max, Autodesk 3ds Max</p>

			<u>Illustration software</u> Adobe Illustrator Adobe Photoshop Adobe Creative Suite Digital Publishing Suite ArtRage Corel Painter Sketchbook Pro	Maya AutoCAD Augmented Reality (AR) 3D Studio V-Ray
			Knowledge of Visual Design/illustration styles and types	
Writing	13,343	9%	Fluent English Different dialects of English- British, American, Australian or Knowledge of other languages (Mainly Spanish, Portuguese, German and French) <i>Skilled in</i> Content Writing Copywriting (sales, email, website, landing pages) Article writing Ghostwriting Media & Entertainment writing SEO Writing	SEOMoz Writing Blog Writing Creative Writing Business Writing Medical Writing Technical Writing Academic Writing Fiction Writing Research Editing and Proofreading Rewriting
Web design	12,503	9%	<i>Skilled in</i> UX/UI Web design Mobile App Design Graphic Design Visual Design Responsive Design Interaction Design Journey Mapping Usability Testing Software Design Wireframing <u>Web design languages</u> CSS CSS3 HTML HTML5 JavaScript PHP TypeScript React Gatsby.js	<u>UX/UI Design Software</u> Adobe XD Adobe Illustrator Adobe Photoshop Balsamiq, Figma, Sketch Zeplin Axure RP <u>Website Builders & CMS</u> <u>Platform skills</u> WordPress Elementor Shopify InVision Marvel Proto.io
Digital marketing (including SMM, SEM, SEO)	8,317	6%	Social Media Marketing skills Social Media Management Search Engine Marketing (SEM) Search Engine Optimization (SEO)	Facebook, Twitter, Instagram, YouTube marketing E-mail marketing LinkedIn marketing Amazon Marketing Google Ads

			<i>Skilled in</i> Social Media Advertising B2C& B2B marketing PPC Campaign Setup & Management Campaign management, including Setup Tracking & Analytics Brand Positioning & Messaging Customer Acquisition Customer Retention Social media content writing Content marketing Internet marketing	Google Analytics Google tag manager ClickFunnels Influencer marketing Telemarketing Cold Calling Appointment Setting Customer Service Fluent English
Mobile App. Development	7,563	5%	<i>Skilled in</i> Mobile application development <u>Mobile platforms</u> Android, Windows, iOS, ices, iPadOS, Hybrid Native, Apple Development APIs, AVKit <u>Mobile App Development Skills</u> Ionic Framework Google Analytics Angular Firebase Flutter React Native Android Native Amazon Web Services React AngularJS Unity 3D Xcode Xcodebuild CRM SAP Adobe XD Sketch Framer X <u>Databases skills</u> MongoDB MySQL PostgreSQL SQLite	<u>Mobile Programming Languages</u> Java Kotlin Swift Objective-C Python JavaScript Scala HTML5 CSS CSS3 TypeScript C Dart Node.js PHP Symphony 3D Design Virtual Reality (VR) Three.js Magento Advanced Business Application Programming (ABAP)
Sales	7,019	5%	<i>Skilled in</i> Sales Development Sales Process management B2B B2C sales eCommerce Sales management Field Sales Management Telemarketing Sales Channel Development Sales Funnel Development Sales Channel Development	Lead generation Lead Generation Strategy development Lead Generation Analysis Lead Nurturing Lead Generation Tools Salesforce CRM, Pardot Digital Marketing

			Partnership Development Contract Management Vendor Management Logistics & Shipping Business Analysis Buyer Sourcing Product Sourcing Supplier Sourcing Purchasing Management Supply Chain Management Procurement management Advertising	DigitalMarketingPlatforms (Amazon etc.) Market Research Internet Research Data Mining Data Scraping List Building
			Communication skills Interpersonal Skills Relationship Building skills Out/Inbound Sales skills Business Development skills Negotiation skills Customer Acquisition skills Management skills	
Video/Audio Production	5,324	4%	<i>Skilled in</i> Video/Audio Production Video Post Editing Video/Audio editing Music Arrangement Sound Design Sound Effects Audio Engineering Audio Post Production Audio Mastering Audio Mixing Audio Engineering 3D Animation 2D Animation	<u>Video Editing Software</u> Adobe Premiere Pro Adobe After Effects Final Cut Pro X Adobe Premiere DaVinci Resolve Avid Media Composer Maxon Cinema 4D Adobe Photoshop Adobe Illustrator Autodesk Maya Prezi
Data Science & Analytics	4,360	3%	<i>Skilled in</i> Data Management Big Data Data engineering Data Modeling Data Analytics Data Analysis Data Mining Data Processing Data Extraction Data Architecture Data Encoding Web Scraping Data Scraping Data Cleansing Data Visualization Data Monitoring A/B Testing Machine Learning Deep learning Artificial Intelligence	<u>Programming languages</u> Python Scrapy html2text Java Optimizely SQL MySQL SSIS (SQL Server Integration Services) PHP JSON Javascript OpenCV <u>Required Software</u> pandas, Microsoft Power BI, Stata, SAS, SPSS, Excel, Excel VBA, R, ArcGIS, Cloud Platforms, Amazon Web Services, Talend Open Studio,

			Natural Language Processing Digital Mapping Statistical Analysis, ETL Pipelines MapReduce Neural Networks Database Design Database Architecture Database Development	Google Experiments, Google Analytics, HubSpot, QGIS, Apache, Apache Spark, Apache Hadoop, Keras, TensorFlow, Tableau, Airtable, Microsoft Access
IT & Networking	4,010	3%	<i>Skilled in</i> DevOps engineering Systems Engineering System Administration Network Administration Network Administration Systems VPN SSL DNS VOIP Database Administration CI/CD Platforms Security Analysis Security Infrastructure Security Engineering Solutions Architecture Cloud Computing Cloud Administration Web servers Server Administration Server Implementation Server Monitoring Server Virtualization Software Network Security Software distribution	<u>Programming languages</u> .NET, Python, Ruby, SQL, MySQL, NoSQL, Oracle database, Java database, PHP, Java servlet, API, MongoDB, node.js, XML, C programming <u>Required software & tools</u> Amazon Web Services, Git, Docker, Microsoft Office 365, Windows PowerShell, Microsoft Windows Azure, Windows Server, GSuite, Kubernetes, Asterisk SIP, Terraform, Cisco ASA, Cisco VestaCP, NGINX, DigitalOcean, VMWare vSphere, VMware ESXi, Veeam, Microsoft Active Directory, Microsoft Exchange Server, Linux, Centos, Zoho, Apache
Virtual/Admin assistance	3,582	3%	<i>Skilled in</i> Administrative Support Executive assistance Customer Service Communication Email Communication Phone Communication File Maintenance File Management Schedule management Calendar Management Records Management People Management Task Coordination Data Entry Data Processing Web search Copy typing	Light Bookkeeping Light Project Management Business Writing Fluent English or other European languages Multitasking <u>Required software</u> Microsoft Office (Word, Excel, PPT) Google Suite Google docs Zendesk
Animation/Motion graphics	2,593	2%	<i>Skilled in</i> 3D Animation 3D Modeling 3D Rigging	Pencil2D Adobe Character Animator Adobe Flash Player Adobe Photoshop

			3D Rendering Motion graphics 3D Design 2D Animation Whiteboard animation Visual Effects (VFX) Flipbook Animation	Adobe Illustrator, Blender3D Adobe After Effects Maxon Cinema 4D Anime Camera DesignCAD Prezi
			<u>Required software</u> Adobe After Effects Adobe Illustrator Autodesk Maya Autodesk 3ds Max Toon Boom Harmony Adobe Animate	
General marketing	2,502	2%	<i>Skilled in</i> Marketing Management Marketing Strategy development Brand Positioning & Messaging Customer Acquisition Strategy Customer Retention Strategy Growth Strategy development Go-to-Market Strategy development B2B, B2C marketing Channel Prioritization Merchandising Category management Product management Vendor management Business Development Brand Consulting Startup Consulting Niche Marketing Mass Marketing Network Marketing Coaching	Business analysis Market Analysis Competitive Analysis Budgeting & Forecasting Advertising Audience Targeting Direct Marketing Influencer Marketing Content Marketing Content management Content Distribution & Promotion Internet Marketing Inbound/Outbound Marketing Media Relations Public Affairs Market Research Pricing Research Brand Research Customer Research
Research	2,476	2%	<i>Skilled in</i> Research Methods Quantitative research Qualitative research Evaluation research Competitive Analysis Data Collection Data Analysis Data Processing Survey Administration Survey tools (ex.SurveyMonkey) Interviews Article writing Academic writing & editing Creative Writing SEO Writing Blog Writing Content Writing Ghostwriting	Internet research Market research Political research Business research Financial research Historic research Scientific Research for economics, political science, medicine, education, computer science Information literacy Critical thinking Problem solving Attention to detail

			Proposal writing Grant writing Report writing Journal writing Consultancy	
Project/Product management	2,284	2%	<i>Skilled in</i> Project management Project Scheduling Time Management Risk management Stakeholder management Conflict management Business Process Management (BPM) Budgeting & Forecasting Cost management/control Reporting Customer Support Operations & Workflow Operations & Supply Chain Research & Strategy <i>with</i> Communication Negotiation Conflict Resolution Decision Making Leadership Critical Thinking Problem solving Strategic Thinking <i>and</i> Analytical skills <u>Agile project management</u> Backlog Management User Story Mapping Team Alignment Supervisory Skills Business Analysis Agile coaching Technical expertise/background in some cases <u>Agile project management approaches</u> Scrum, Lean Manufacturing, Kaizen, Six Sigma. <u>Required software</u> Microsoft office Jira, Trello, Gantt chart	<u>Product management</u> <i>Skilled in</i> Product Management Market Research Business Analysis Data Analysis Product Strategy UX/UI Product Strategy development Product Design Product Development Product Management Product Go-to-Market Strategy (roadmap, implementation strategy, backlog) Growth Hacking Quality Assurance Team alignment <u>Agile Design Thinking</u> Agile Approaches Lean Development Rapid Application Development Extreme Programming, Kanban, Scrum Technical background preferred <i>with</i> Critical thinking Leadership Communication and Product consulting skills <u>Required Software</u> Jira, Google Analytics, Microsoft Excel
Customer Service (including customer technical support)	1,647	1%	<i>Skilled in</i> Customer Service Email support Chat support Call Handling Administrative Support	<i>With</i> Customer support experience Fluent in English or other languages (Spanish, Portuguese, French etc.) and Translation

			<p>Communication Etiquette Client Administration Client Assessment Client Contact Client Issue Resolution Time management Internet Research Data entry & processing Business process outsourcing (BPO) Customer acquisition strategy Customer retention strategy Order Tracking</p>	<p>Typing Multitasking Interpersonal Communication and Organizational skills</p> <p><u>Required software</u> Ticketing Systems, Shopify, Zendesk, cPanel, Web host manager, MS Office, Google Calendar, Cloud services and VoIP</p>
Accounting & consulting	1,392	1%	<p><i>Skilled in</i> Accounting Bookkeeping Cash Flow Analysis Financial Accounting Financial Reporting Legal Consulting Tax Law Tax Preparation Corporate Taxes</p>	<p>Knowledge of taxation systems of different countries, particularly US</p> <p><u>Required Software</u> Microsoft Excel QuickBooks XERO</p>
Management consulting (including, business support, business analysis)	714	0.5%	<p><i>Skilled in</i> Management consulting Project Management Strategic Planning Organizational Planning Organizational Design & Effectiveness Business Analysis Business consulting Business Development Strategy Business Process Modeling Business Requirement Documentation Business Coaching Business Writing Business Consulting Compliance Consulting Business valuation Business Modelling Change management Logistics & Supply Chain Management Transformations/Change Management Business Process Reengineering Procurement Management</p>	<p>Marketing & Sales Management Property management Warehouse Management Financial Modeling Financial Analysis Fundraising Venture Capital Consulting Business Intelligence</p> <p><i>With</i> Communication, Team building and Interpersonal skills</p> <p><u>Required software:</u> Tableau, Excel, Microsoft Power BI SSRS</p>
Financial Planning	574	0.5%	<p><i>Skilled in</i> Financial analysis Financial modeling Financial projection Financial forecasting Financial Accounting</p>	<p>Wealth Management Financial advising Research Writing Linear Programming Problem-solving</p>

			Financial Planning Financial reporting Financial management Valuations Business Analysis Corporate Finance Mathematics Statistics Startup Consulting	<u>Required Software</u> MS Excel Excel VBA MATLAB Microsoft Power BI Python R-studio
Human Resources (including technical recruiting)	520	0.5%	<i>Skilled in</i> Recruiting Technical recruiting IT Recruitment Boolean search Internet Recruiting LinkedIn Recruiting Resume Screening Interviewing Candidate Sourcing Candidate Management Candidate Evaluations Candidate Recommendations Human Resource Management Labor Relations & Negotiation	Personnel Information Systems Conflict Resolution Cultural Management Resume Writing <i>With</i> Research, Communication and Interpersonal skills <u>Required Software</u> Microsoft Office
E-learning course design	84	0.05%	<i>Skilled in</i> Instructional design Online training design Training and development formats Online Synchronous Distance Education Hybrid Face-to-Face eLearning Course Lesson formation Program Curriculum creation Content Writing, Editing & Proofreading Graphic Design eBook design e-Learning Consulting Ability to design eLearning courses for different sectors, including higher education, business etc.	<u>Required software</u> Learning Management System (LMS) Adobe eLearning Suite Adobe Captivate Adobe Illustrator Adobe Flash Player Microsoft PowerPoint Articulate eLearning Articulate Storyline Articulate Presenter iSpring Canvas LearnDash Moodle SCORM
Microbiology	32	0.02%	<i>Skilled in</i> Chemical Engineering Microbiology Product Formulation Biology Biochemistry Biotechnology Cellular Biology DNA Genetics Microbiology Molecular Biology Scientific Writing Bioinformatics	Environment ecology Botany Organic Chemistry Digital Imaging & Communications in Medicine (DICOM) Nursing Genetics pharmacology Synthetic Biology Next Generation Sequencing Ophthalmology Chemistry

			Virology Research Editing Medical Terminology Epidemiology Optometry biology AP Bio Biology	Food science & technology Research & Development, Alchemist Biology Biometrics
Epidemiology	20	0.01%	<i>Skilled in</i> Epidemiology Biostatistics Statistics Analytics Consulting Data Entry Data Mining Data analysis	Cellular biology Biotechnology Genetics Microbiology Bioinformatics Bioscience Internet Research Writing Critical Thinking
<hr/>				
Total jobs available	138, 985	100%		

Source: Upwork.com, Freelance.com, Guru.com, PeoplePerhour.com

Thus, as the data collected from the five popular freelance websites show the most demanded occupations in remote market in Covid-19 world are *software/web developers, designers, and writers*, followed by *marketing, sales, multimedia, IT and data specialists*. The demand for the rest of the professions like *researchers, project managers, accountants, financial planners, customer service providers* and several more is lower but still there are many opportunities for the latter professionals to offer their services in the freelance market. The skillset required for almost any profession besides the mastery of the subject matter, includes knowledge of certain techniques, and mastery of relevant software or online tools. The knowledge of English language is not mentioned in the requirements of most jobs but is assumed one of the main skills as all the communication on freelance platforms happens in English.

The most demanded occupations in the freelance market, generally

The previous segments of the research identified i) the most demanded COVID-19 situational jobs in the labor market, ii) availability of these opportunities on five popular freelance platforms, ii) revealed the degree of demand for these occupations on most popular freelance websites and mapped the skills needed to become competitive in the market. This prompts the question whether *or not there are any other professions that did not appear among the COVID-19-associated occupations, yet have an increasing demand in the world freelance market*.

In this segment, the research maps the skills that are generally most demanded in the freelance market and have the potential to grow.

Official reports and expert opinions on the most demanded skills in freelance market are collected from the most popular online freelance platforms — Upwork, PeoplePerHour, Toptal, Flexjobs, Moonlighting — and from various articles on this topic, blog posts, and expert opinions available online. The sources cover analyses of the period preceding the outbreak of COVID-19, where comparisons with previous years are offered (naturally, absent any advance knowledge of the outbreak) as well as analyses of the period succeeding the COVID-19 outbreak, where the impact of the virus on the freelance market is signaled.

One of the largest freelance platforms, Upwork (that claims to have 12 million registered freelancers) releases an annual report of the 100 most wanted skills on their platform. They use the most in-demand skills on the platform to measure growth over the years. The skills shown are claimed to be the most in demand and having a fast growing job market. So, according to the 2019 Upwork report, the top most demanded services in 2020 were then expected to include occupations in all the disciplines mentioned above: from web development, graphic, product design to writing, research and project management; from financial accounting, data science to recruiting, animation and virtual assistance. Knowledge of certain online tools and software cover most of the list. The report can be accessed here.¹⁴

The other freelance platforms provide the statistics they have observed on their respective platforms, while the rest of the sources searched present general observations. All the sources examined in this research reflect demand in the same occupations with insignificant differences among them.

Thus, the following professions are expected to have a growing demand in 2020;¹⁵

- Software and web development, with focus on blockchain development and cloud computing
- Design; web design with focus on UI/UX and graphic, product design
- Video and Animation production and editing
- Writing services, particularly, content writing and copywriting
- Data specialists of all levels, with basic skills of data entry to advanced data science and data security
- IT and networking skills, with focus on system administration and network security
- Marketing, mostly digital that includes SMM, SEM, CRM etc.

¹⁴ Upwork debuts the Upwork 100, ranking the top 100 in-demand skills for independent professionals. (2020, February 21). Press, News & Media Coverage. <https://www.upwork.com/press/2019/11/19/the-upwork-100-q3-2019/>

¹⁵ Upwork debuts the Upwork 100, ranking the top 100 in-demand skills for independent professionals. (2020, February 21). Press, News & Media Coverage. <https://www.upwork.com/press/2019/11/19/the-upwork-100-q3-2019/>

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<https://n26.com/en-us/blog/high-demand-freelance-jobs>

- Project/Product management, mostly specialized in agile approaches
- Accounting, bookkeeping, financial modeling and business analysis
- Sales, virtual assistance and customer services
- Recruiting and career advising and mentoring
- Translation

Comparing the reports for those generally most demanded professions in the freelance market with the earlier analyses of occupations most demanded post the COVID-19 outbreak, *career advising and mentoring specialists* and *translators* are observed to be the only difference between them.

Interview with Freelance SMM specialist from Armenia

The interviewee has up to two years of experience in freelance social media marketing (SMM) but she is working only with Armenia-based companies as according to her *“in Armenia, the demand for SMM services exceeds the supply and if you are a professional in the field you will have a job, no need to go into international markets”*.

Currently, the interviewee is responsible for the marketing of two different firms and SMM for several others. According to her, it is quite possible to earn good stable income by doing freelance SMM in Armenia. The difficulty is that the freelancer should always be ready that some project might be closed and have alternatives. The negotiations with the client should be properly made so as the scope of work is clearly defined.

The interviewee thinks that like in every field, the newcomers in SMM face many difficulties in finding clients, making good income from the work, but it is a natural stage that should be passed. The newcomers should start with comparatively lower prices, create a personal blog, do networking and gradually stand out as experts.

According to the interviewee, the main skill and perhaps the most difficult one that the SMM specialists should have or continuously develop is the taste for everything, *“the specialist should understand what is a beautiful photo, or interesting, attractive content etc.”*. The other skills include knowledge of languages, general literacy and self-learning abilities. If all of the above is present, the tools of SMM can be easily learned by watching YouTube videos or some trainings.

“One of the critical skills for the freelancers for any field it the ability to diversify the skill set and services they offer. So as in situations, like COVID-19 they are able to retain their income.”

According to the interviewee, the COVID-19 outbreak overall did not make any serious impact on the field yet. For her, only one touristic project closed but she was able to find another one quickly and also there is still demand for her online courses. However, if this economic shutdown continues, the specialists will start facing lack of projects, as the financial capacity of people will decline substantially.

Thus, the following conclusions may be drawn from the findings obtained thus far: firstly, the findings reveal that there is not much change in the freelance labor market in the types of occupations that are in demand in the post COVID-19 outbreak period, yet. Secondly, a demand does exist in the market (which some sources

consider an increased demand) for services directly or indirectly influenced or driven by COVID-19. However, whether this demand will be short-term and will fade with the invention of a vaccine for COVID-19 or will last longer is inconclusive at this time. Finally, there is an insignificant difference between pre-COVID-19 projections of demand for freelance occupations in 2020 and current COVID-19 conditions, primarily because those are occupations and services that are easily provided remotely (such as web development, design, writing) and adapt to changes quickly. And there are those other occupations (medical, scientific services, project management, human resources management) which impose challenges doing remotely.

Freelance opportunities in other professions

This segment of the research explores the freelance market for professions and services that have demand but are not listed in this paper among the COVID-19 driven professions and/or which are not very popular in the remote job market.

Translation

Translation services are widely provided on freelance market. The main requirement that the clients want from a translator is to be a native speaker of the target language of the language pair. Therefore, for the Armenian translators, the market is not big, though still there is an existing demand for translations into/from Armenian on some freelance platforms. Most popular translation portals are examined on the Internet and the following are the findings.

Gengo.com- This the most popular translation platform for freelancers where one should be a professional translator to be able to provide the service. However, it does not support the Armenian language.

Smartling.com- is also a famous translation platform offering professional translation services. To be able to offer translation services at Smartling.com, a translator should have a degree or a certification proving the professional level and should pass a test on the platform. After being confirmed by the platform review committee, the translator becomes a member and gets a job offer when clients ask for his/her language pair.

Textmaster.com- is another freelance platform that attracts both advanced and beginner translators; it has quite detailed registration process and an evaluation test that the translators should pass to be able to offer their services. Textmaster operates like Smartling by directing clients to the translators.

Translated.com- is a translation platform with an easy registration, where translators create their profiles indicating all expertise and competencies and then the platform forwards clients to them. The communication happens between the agency and a translator.

Other types of freelance platforms provide an online space for both clients and freelance translators, where the former can post a job and the later can apply.

The most famous ones are **Translatorscafe.com**, and **TranslatorDirectory.com**, where freelancers can easily and quickly register and start applying for jobs. After a client and a translator find each other, all the communication happens off the portal. As of April 20-23, 2020, there were several job opportunities for translators of English-Armenian or other languages-Armenian pairs on both portals.

Other similar platforms are **Onehourtranslator.com**, **Proz.com**, and **Smartcat.com** where the same logic that is mentioned above applies. However, at the time of data collection there was no job opportunity for Armenian translators on these platforms.

Fiverr.com and Openmic.co also provide professional translation services in cooperation with freelance translators. The logic of these platforms is different; they have buyers and sellers. The translators create their profile like their “service provision firm” and try to sell their service by making their profile stand out and the buyers just search through sellers to find the most suitable one for them. All the negotiation process happens through the platforms and the platforms take a fee for the service like Upwork.com, Freelancer.com etc.

There are also a few job opportunities for the freelance translators on the popular freelance platforms; up to six jobs on Upwork.com and one on Peopleperhour.com.¹⁶

The main requirements for the freelance translators are a certification or degree in the field and skills in some cloud based or software based translation software, like Memosource, XTMcloud, Smartcat, STL studio etc.

Conclusively, though the degree of demand on the freelance market for the Armenian translators is not big, there is still an existing demand for the professional translation services for the freelancers who translate to and from Armenian language. There are various platforms that can be used for the service providers; the first ones mentioned above work as a bridge-agency, the second ones simply offer a space for a client and a translator to find each other and the ones with “buyer and seller” logic. The first and last ones has more complicated procedures for cooperation but are more secure, while the second ones are easier and quicker but less secure. Finally, there are a myriad of translation agencies that has a “become a translator” icon on their home page and a translator can contact them directly and offer his/her services for a cooperation.

Teaching/Tutoring

Online teaching and tutoring has become a practice largely utilized by both companies and individual professionals. The most famous freelance platforms for teaching/tutoring that does not have any country limitations are presented below. In most of the platforms, tutoring is conducted in English; two other Russian language based platforms are also explored.

Chegg.com- is an online platform for freelance tutors for any subject from painting to biology and computer science. The requirements for registration include proof of having at least four-year degree and passing of the test that will check the mastery of the subject. The clients ask for the service on the platform and then the platform links them to the tutor.

Buddyschool.com is another tutoring platform, online portal where tutors create their profile indicating the subject matter and the clients choose the tutors from the available list directly writing to them. It has easy registration process. It includes wide variety of disciplines; from science to hobbies; like arts and crafts, knitting, chess etc. However, language tutoring is the most popular one on the platform.

Tutorme.com- is a similar to Buddyschool.com where clients choose the tutor by looking at their profile but with some more requirements, like teaching experience, university degree and the evaluation of the mastery of the subject to be taught. It as well includes variety of subjects; including physical education and culinary arts.

Skooli.com – is another tutoring online platform, with the processes and requirements similar to the Tutorme.com, but is has focus on several subjects that are math, languages, natural sciences, and business.

Preply.com- is an online platform that offers more opportunities for tutors and is different from previous ones; it allows tutors to offer their services not only in English but also in other European and some Asian languages,

¹⁶ Observations are made on April 20-23, 2020

including *Russian*. The platform rules follow the logic of the previous two ones; the tutor creates a profile and the client connects them directly. The portal has a focus on languages but it also provides tutoring services in many more subjects like economics, web development, arts, music, acting skills etc. Preply.com can be a more appealing platform for tutors in Armenia because of the opportunity it provides to teach in Russian. More tutors will have the chance for online tutoring on the platform.

Tutoronline.ru – is a Russian agency/platform for online tutoring where teaching is conducted only in Russian. One should pass the test and be evaluated by the agency to be able to teach. The platform has its own teaching methods the course of which is provided to the tutor. When the agency hires the tutor, work is provided to the tutor. The platform supports wide variety of subjects.

Skyeng.ru- is one of the largest online language schools in Eastern Europe with 7,100 teachers and 200,000 lessons every month. It is a platform for online tutoring with focus on English, which is taught to all age groups and math for Scholl kids. The requirements include university degree and testing/evaluation of the knowledge. The agency links clients with the tutor.

Interview with Freelance English Teacher from Armenia

The interviewee has a background in English language and literature and two years of work experience in teaching English to foreigners in freelance market. According to the tutor, this is her main occupation currently and it is quite possible in Armenia to earn stable, higher than average income by teaching freelance. She is mainly cooperating with Skyeng Russian agency but also getting clients from her networks. According to her, best way for freelancing is to use your skills for several occupations; she is also engaged in article and copy writing for the same agency.

“The difficulty lies in the beginning of the freelance career when you are a newcomer; income is not big and there are many unknowns to be filled in. But with the experience, the confidence comes and you challenge the “stereotype” that you cannot earn enough income in Armenia by being a teacher”, says the interviewee.

The main opportunity of freelancing is the ability to manage your time freely, while the difficulty is that there is no interaction with colleagues and a lack of communication.

According to the interviewee, there were expectations that the demand for the English courses will decline as a result of measures brought by COVID-19 impact and the agency, she works with, stopped accepting new teachers for a month but evidencing that there is no decline, the school reopened and is currently looking for new teachers. For the interviewee, the only change connected with COVID-19 was the closure of her copywriting project but instead she received new students and currently she is a full-time freelancer.

According to her, the main skills to enter freelance market for teachers or tutors is the mastery of the subject matter they teach, some research skills to be able to find big schools that meet their qualifications and being a tech-savvy. *“Online teaching is completely different from offline teaching, and a teacher should be familiar with the tools and techniques like total physical response, action songs and others that online platforms offer.”*

A variety of tutoring opportunities are also available on other freelance platforms, where clients mainly seek experts of the subject they are interested in. As of April 20-23, 2020, 1251 tutoring opportunities were available on **Upwork.com**, 50 on **Freelancer.com**, 35 on **Peopleperhour.com** and 15 on **Guru.com** where clients look for tutors of different languages, yoga, web programming, data processing as well as teachers of musical instruments, history, drawing and so on.

Fiverr.com also can be considered as an option for the tutors. The platform requirements and procedures are the same like in the case of translation services.

Science

Traditionally, scientists did not provide their services on online platforms or did with limited capacity; however, some articles claim that after the launch of the comparatively new **Kolabtree.com** freelance platform the situation has changed for scientists.¹⁷ The research explores through the platform and several other ones to identify freelance opportunities for the scientists.

Kolabtree.com is a freelance platform for scientists from the different parts of the world to offer their knowledge and expertise to a variety of clients. It opened in 2015, and as of 2019 10,000+ scientists and academics registered on the platform and 9M+ worth projects have been posted on the website.¹⁸ Kolabtree covers 2000+ disciplines with the focus on AI and machine learning, agriculture and food science, biotech, engineering, medical science, physics, chemistry, social science and economics. The platform has very easy registration process for the scientists, no requirements for the registration. The scientist builds up his/her profile and then browses available projects to propose. The client for each project sets the requirements. If the client chooses the scientist and the latter passes the interview, the cooperation begins. **The main requirements of the clients are proof of scientific activities, like publications or other demonstrable work.**

To measure the real demand for the scientific services on the platform, search with each major subject area filter was conducted for the projects available during March-April, 2020 and the following are the results.

Scientific Consulting- 50 jobs were available on the portal that required scientific consulting on different subjects.

Scientific Writing, Food Science and Technology, Chemistry- are the subject areas where from March to April, 2020, 10-40 open projects were available on the platform.

Athletic training & coaching, Business analytics, Data Analytics, Data science, Sports/Exercise & Fitness, Public Health, Probability & Statistics, Artificial Intelligence, Biology, Biotechnology, Botany, Environmental Sciences, Forensic Science, Health & Medicine, Research methodology, Materials Science, Mathematics, Neuroscience, Nutrition, Construction & Building, Engineering, Telecommunications, Bioinformatics, Mental health, Anthropology, Education, Psychology- are the subject areas for which from 1 to 6 jobs were available on the platform.

No jobs were available on other subject areas for the evaluated period.

¹⁷ Younger, J. (2019, July 30). Scientists are a new force in the freelance revolution: Meet Kolabtree. Forbes. <https://www.forbes.com/sites/jonyounger/2019/07/29/scientists-are-a-new-force-in-the-freelance-revolution-meet-kolabtree/#49168d1a7505>

The rise of the freelance scientist. (2020, March 9). Editage Insights. <https://www.editage.com/insights/the-rise-of-the-freelance-scientist>

¹⁸ Kolabtree. (n.d.). Hire freelance scientists and researchers at Kolabtree. <https://www.kolabtree.com/>

Upwork.com, Freelancer.com, Peopleperhour.com, Guru.com freelance portals were also searched for the same subject areas to measure the demand on these platforms as well. The higher number of jobs were available in the subject areas of **Engineering, Architecture, Chemistry, Legal consulting, Biology, Public Health and Biotechnology**. Most of the jobs are from Upwork.com. All of the subject areas with available jobs are presented in the below table. **The main skills sought by clients was the mastery of the subject matter, writing and research skills, and knowledge of subject related software.** See table 5.

Table 5: Subject areas with available jobs, April 20-23, 2023

Profession	Real number of jobs
Architecture	445
Law, legal consultations, writing	240
Public Health	148
Biology	211
Biotechnology	84
Botany	4
Chemistry	314
Environmental Sciences	11
Neuroscience	10
Engineering	1488
Bioinformatics	28
Anthropology	14
Psychology	44
Sociology	16

Source: Upwork.com, Freelancer.com, Peopleperhour.com, Guru.com

Interview with Freelance Chemist from Armenia

The interviewee has a background in chemistry and is actively engaged in freelance work for a year. The interviewee so far has engaged in seven projects. One of the clients prolonged the contract and currently he is working on a project as a computational chemist. According to the interviewee, there is an existing demand for chemists for doing research or providing consultations, particularly the developing fields are cosmetic chemistry and nutrition.

“With the outbreak of COVID-19, the demand for chemists even raised, now we are getting more attention. Chemists are wanted for jobs connected with the virus, like creation of disinfectants, virus related research etc.”

The interviewee is using the Upwork platform for his freelance career, as it is more secure and comfortable, and according to his observations, the demand there for chemists is higher than on other platforms like Freelancer.com.

The freelance chemist suggested that it is difficult, though not impossible for chemists to have stable income by only freelancing, as the demand is not that high and a chemist should be multi-skilled, (physics, mathematics) to be able to attract work continuously. Instead, the interviewee is widening his expertise and in addition to chemistry is currently entering the field of machine learning, the demand of which is one of the highest in the international market.

According to the interviewee, the main skills to enter freelance market for chemists and in general scientists is the mastery of the subject matter, and very good English language skills. As well, the freelancers should diversify their knowledge towards different directions to be able to become competitive in the market. *“I would suggest specialists in chemistry to look into cosmetic chemistry and food technology as those are currently the most demanded ones.”*

Academicknowledge.com is another online platform for freelance scientists with the focus on academic writing. There are writing jobs in different disciplines. The jobs are posted on the platform and the writers should apply. To become a scientific writer on the platform one should present a proof of qualification, pass a writing test and if successful, start applying. As of April 22-23, 2020 available in-demand writers on the portal belong to the following subject areas **Accounting, Economics, Marketing, Project management, Business, Construction, Engineering, Health, Law, Biology, Chemistry, Psychology.**

Fiverr.com can be considered in case of freelance scientific services as well

Photography

The search on the freelance platforms shows that photography specialists are also demanded in the freelance market. Total of 1,402 jobs for freelance photographers were available on the freelance portals of **Upwork.com, Freelancer.com, Peopleperhour.com, Guru.com.** Photography services are also offered on **Fiverr.com.** The main services required are photo editing and photo shooting. Main skill needed is the mastery of different genres of photography and Adobe Photoshop software.

Another way for photographers to engage into international market is selling their pieces of work on the online platforms like **adobestock.com, shutterstock.com, alamy.com and some others** that are claimed to be the most popular platforms on online market.¹⁹ The requirement for becoming a seller on these platforms is a registration and evaluation process. The latter includes reviews of several photos provided by the photographers. The platforms help photographers in the process of becoming competitive in the market by suggesting prices, certain marketing strategies etc.

Career Consulting

Career consulting is also listed among the demanded freelance professions by various sources. However, the review of the freelance websites shows that though career coaching has a demand in the market it is not quite big. As of April 20-23, 2020, 160 job opportunities were available for freelance career consultants on **Upwork.com, Freelancer.com, Peopleperhour.com, Guru.com.** The main skills needed are career coaching/counseling, resume/cover letter development; social media profile development, life coaching, interview preparation and HR consulting.

¹⁹The 14 most profitable places to sell your photos online. (2019, December 10). MakeUseOf.

<https://www.makeuseof.com/tag/places-sell-your-photos-online/>

How to sell photos online: For both amateur and pro photographers. (2019, April 21). Shopify.

<https://www.shopify.com/blog/how-to-sell-photos-online>

Top 11 best places to sell photos online and make money. (2020, March 19). Envira Gallery. <https://enviragallery.com/best-places-to-sell-photos-online-and-make-money/>

Interview with Freelance Architect from Armenia

The interviewee has a background in architecture and has been engaged in freelance market since 2016. As a freelancer, so far she has performed up to 40 projects both in the field of architecture and interior design.

According to the interviewee, it is possible to earn stable income by freelancing but there is one big negative side; in freelance market, the works to be performed are mostly technical with limited creativity. *“If you only do freelance work, your professional growth opportunities are limited, there is no self-growth.”*

The interviewee got her first project through her networks and according to her *“Networking ability is one of the most important things in building up freelance career. You should create your network consisting of professionals who can refer clients to you.”*

According to the interviewee, the main skills, professionals in the field should have for freelancing is knowledge of 2D and 3D modeling programs like AutoCad, Archicad, Revit etc. As well, the architects should build up their portfolio and display their works on online platforms like Behance.

The interviewee thinks that the most demanded professions on the freelance market are software/web developers and UI/UX designers but there is good demand also for architects and interior designers.

“So far there is no change in demand for freelance architects connected with COVID-19 as three months is very small period for architectural projects but if the situation continues the field will suffer as well”.

So, the analysis show that even the professions, like scientists and tutors from a wide range of disciplines, traditionally not demanded in remote market, now can offer their services to the international clients through freelancing. The demand for language tutoring is bigger but there is also demand for yoga, musical instruments athletics and other teachers. Scientific consulting and writing are most demanded skills in the market. The chemists, food science and technology specialists, engineers, architects, biologists, biotechnologists, public health and law specialists as well have higher demand if compared with other scientific disciplines. Most of the jobs require good knowledge of English language, though there are several tutoring platforms where teaching can be conducted also in Russian. Scientists can look for freelance opportunities in both specialized platforms like Kolabtree.com and traditional ones like Upwork.com.

Brief review of popular freelance platforms

This part of the research briefly touches upon several popular freelance platforms by presenting short guides for using the platforms for freelance work.

Upwork.com- Upwork is one of the leading freelance platforms that offers a space for clients and professionals to cooperate on various projects. It has more than 100 thousand available jobs and 12 million freelancers registered on it. On Upwork, registration is free. Provided a professional fills in all the required

information and demonstrates some work pieces, the registration is to be successful unless the number of those particular services providers far exceeds the jobs posted. In that case, there is a risk that the application can be denied.

All the current jobs are available for the registered freelancers to apply. At first, the freelancers get some amount of free bids for applying but as the bids end, the freelancers should buy them. The clients set the requirements for each job. The freelancer has to propose, in case of being selected, pass an interview and then start working. It is possible to earn from low to high income at the platform based on the expertise of the freelancer and the profile standing. The platform takes from 20%-10% fee for each transaction, however it secures the payment for the work done. Upwork has many features that ensures transparency and accountability between an employer and a freelancer, which makes cooperation to be secure. Through its features and fee structure, Upwork fosters long-term cooperation between a client and a freelancer.

The main challenge on the platform is the fierce competition; to become competitive the freelancers should persistently apply for the jobs, provide high quality work to gain positive reviews from the clients and improve their profile. For newly registered members, it is even more challenging to find work as they do not have any reviews on their profile, but it is still possible, if the freelancer takes his time and puts efforts into the work. The platform focuses mainly on technical jobs but it is open for any discipline. Upwork offers many features through which a freelancer can verify and demonstrate their skills and competencies.

Freelancer.com- is another leading freelance platform that works with the same logic like Upwork but with less requirements. The number of registered freelancers (30 million) far exceeds the number on Upwork, while number of jobs available is only 23 thousand. This makes competition on Freelancer even stronger than on Upwork and gaining average earnings is more difficult than on the Upwork, as low price services are widely offered on the platform. While on Upwork, the registration needs to be approved, on Freelancer anyone can register without approval from the platform. The fee rate (10%) that is charged from the earnings is lower than on Upwork. The platform secures the payment to its freelancers through the set system on place. However, as registration on the portal is completely free, the probability of meeting “unfair” clients on freelancer.com is higher. Freelancer is usually considered for short-term projects rather than long-term cooperation. The platform also offers tests for verifying competencies but those are paid ones. According to different expert and freelancer opinions, this portal is better for newcomers, where the latter have higher chances to find work than on Upwork where the number of higher-level specialists can block new comers to the market.

Fiverr.com- is a free, open platform where freelancers can sell their services (also products) and the buyers can find any kind of service they want; everything is available here from scientific jobs, software/web development to personal fitness trainers and jewelry makers. Such services as photoshopping the buyer with his favorite celebrity can be found on Fiverr. As of 2019, active buyers on Fiverr are 2.3 million and there are 225 thousand freelancers registered. Each seller builds up his/her profile and the buyers contact them through the platform and buy the service. The registration on Fiverr is free, the freelancer creates service packages, sets prices from 5\$-995\$ for a package and offers three different versions of the service in different prices. The fee, Fiverr takes for each transaction is 20%. It secures the payment is made to the freelancer.

The main challenge on Fiverr is the competition as well as earning fair amount of income. As Fiverr, allows 5\$ as the lower fee for the package, the freelancers having higher prices start having problems with demand. It is especially difficult for new members, who are obliged to start providing the service at lower prices initially to be able to become competitive on the platform. The most demanded services, which are called gigs on Fiverr are design (logo, business card,), writing (translation, editing, proofreading), social media marketing and video/audio making and editing, but with any other service it is possible to earn income using the platform.

Toptal.com- is a free, open platform that claims to offer top 3% world talent, the top freelancers of the world to its clients. It is a global network of design, business and technology experts. Toptal claims to have 500 freelancers registered on its platform and more than 10 thousand clients. It provides remote services to the companies that apply to Toptal for employees. The platform's procedures and rules are different from the ones mentioned above. There is no listing of jobs and no available information about the freelancers on the platform, except for a few top ones. The platform serves as an agency which, based on the application of the client, looks into its database of freelancers and matches the requirements with the skills. The projects become available for the freelancer after the registration is successful. The platform is primarily for experienced professionals with years of experience in the field and deep expertise. It has a rigorous screening process, and the platform claims that only 3% of all the freelancers who apply to them are accepted to work through their platform. The benefits of the platform, if a freelancer manages to register on the Toptal, is a quite good income from the work that is estimated to be about 30\$-60\$ per hour for freelancers from developing countries and long-term secure cooperation with the client.

Peopleperhour.com- is another platform for freelance work, where clients and freelancers can register free and establish a cooperation. It has 1.5 million registered freelancers and more than 5 thousand open projects on it. Though the registration process is simple on the platform, the platform team conducts the evaluation of a freelancer's competencies before accepting. A freelancer needs to become certified by the platform evaluation committee to be able to register on the platform. As only the freelancers with certified skills get their way to the platform, the income earned is quite fair. After successful registration, a freelancer can create and sell his/her services and can apply for open projects posted by the clients. The freelancer should carefully build up his/her profile. The platform ensures the security of the agreements and transactions through its carefully designed system and features in place. The fee on the platform is 20% for the first transaction, then it goes down. The platform focuses on the following services; design, web & mobile development, writing & translation, video, photo & audio, business support, admin, software development, marketing & social media but a variety of other services are also provided on the platform.

Guru.com- is a freelance website with more than 3 thousand open jobs and 1.6 million freelancers registered on the platform. It has an easy free registration system and no approval is required for the registration. It offers space for clients and freelancers to collaborate. It has jobs at various disciplines. The freelancer should build up the profile to stand out from others, by including portfolios and presenting all the skills and competencies. The communication between a client and a freelancer can happen through the platform. The platform secures the transactions between the parties. Guru takes 9% fee from every transaction. The fee can reduce if a freelancer buys membership. It has a comparatively small market but it is suggested for both short-term and long-term cooperation. It is less popular than Upwork, Freelancer and Fiverr.

The above mentioned platforms are the ones that are widely used in the international freelance market, have long experience in the field, have built up their reputation and enjoy credibility. The freelancers from Armenia mostly use these platforms, particularly Upwork.com. These are the platforms that offer better opportunities for the Armenia-based freelancers from any field or sector.

There are also other platforms, designed specifically for some professions or skillset;

99designs.com and Designhill.com - only for freelance designers or design agencies.

Skyword.com- only for writers, designers, video/photographers with the focus on creative talent.

Other remote work opportunities can be found on **felxjobs.com, simplyhired.com, hireable.com, nexxt.com and aquent.com** platforms which are not discussed in detail, as the opportunities they offer are very much limited for Armenia-based freelancers; the jobs on the platforms though conducted remotely, are very often require from the freelancer to be from a certain location (country or city).

Tips from the interviewed freelancers:

- Upwork is the most comfortable and secure platform for freelancers from Armenia. However, other platforms can be tried as well, particularly for teaching and science professionals.
- Main skills needed: mastery of the subject matter, knowledge of English language, being tech-savvy, self-learning abilities, diversified skillset
- It is possible to have a stable income from freelancing in different disciplines BUT only when a freelancer has already built up his profile as an expert and has an experience.
- The beginning of a freelance career has some challenges that need to be overcome; mainly low income, shortage of demand or tense competition.
- The challenges can be overcome by persistence and quality work provided, as reviews of the clients on freelance platforms are the one of the first criteria that the clients look at.
- Pros of freelancing: work from wherever and whenever you want, you plan your work.
- Cons of freelancing: Lack of communication and experience sharing, consistent risk that needs to be handled through diversification of services
- COVID-19 impact- no change in the volume of work yet; some projects close but some new appear directly connected with the virus or indirectly influenced by the COVID-19 situation.
- At the time of COVID-19 most demanded freelance occupations are software/web development, design, digital marketing, and writing but there is demand for other disciplines, as well.
- A freelancer should be a life-long learner always working to better his skills and expertise.

Conclusion

Covid-19 virus has made many countries, including Armenia to implement lockdown measures to stop the virus spread. The measures, as expected, created economic hardships, hurt the business sector and contributed to the unemployment. However, there are professions and skills that have become demanded since the outbreak of the COVID-19 pandemic, particularly in freelance market. The research examined the labor demand in the freelance market in COVID-19 reality and mapped the skills and competencies needed to enter the market.

The study revealed that many of the COVID-19 situational jobs are also demanded in the world freelance market. There is a demand for *researchers, data specialists and scientists* in the freelance platforms with the tasks to explore the virus, to collect and analyze data about the virus or create products that would protect from the spread of the virus and so on. *Soft/web developers, design, multimedia, marketing and content specialists* are mostly needed to create different types of products for information campaigns about the virus and protection measures all over the world. *Design, Business and Sales specialists* are needed to design virus related products and sell them.

Same professional services are also demanded in the freelance market to perform works that emerged because of the virus side effects; for example many businesses that did not have focus on the digital world were forced to go online to stay competitive and they needed services of *web developers, designers, digital marketers, multimedia specialists, writers* etc. *Business consulting* services are also required in the market as most businesses are in search of measures to be able to survive the crisis. As well, new businesses have

emerged that offer services and products that are most demanded under current conditions; delivery services, sanitizer and face mask production.

The research findings show that during COVID-19 reality, the most demanded occupations in the freelance market are *software/web developers, designers and writers*, followed by *digital marketers, mobile app developers and sales professionals*. Next comes *Video/Audio producers, Data specialists/scientists, IT and networking professionals* and *Virtual Assistants*. The demand for the rest of the professions is comparatively low but still there are many opportunities for the following specialists; *Animation/Motion Graphic specialists, General marketing specialists, Researchers, Project managers, Customer service, Accounting, Management consulting, financial planning, Human resources and eLearning design specialists*.

The study examined also the freelance opportunities for other professions and found out that there are quite a few freelance platforms, in addition to the well-known ones like Upwork, that are specialized in particular field or discipline, specifically *translation, teaching/tutoring and different branches of science*. There is a demand in the freelance market for professional translators, tutors/teachers from any spheres, as well as certain scientists. Most demanded services in the field of science are *scientific consulting and writing* in various disciplines, followed by services in the spheres of *chemistry, food science and technology, engineering, architecture, biology, biotechnology, public health and legal consulting*. There are opportunities although with lower demand for professionals from other disciplines like psychology, education, anthropology, environmental sciences etc. *Photography and career consulting* are also services with the existing demand in the freelance market.

Overall, the results suggest that the main competencies needed to enter the freelance market is the mastery of the subject matter, knowledge of relevant software and tools and good knowledge of English. Basic research and technical skills are needed to find relevant work and be able to provide services online. The soft skills of persistence, self-management and self-learning are milestones for the success.

The data analysis and interview findings also revealed that there is not much change in the pre-COVID-19 projections for the demanded freelance professions in 2020 and current COVID-19 reality demand. So far, no major change is observed neither in the volume of the jobs nor in the type of occupations that are demanded in the freelance market. The minor change is observed in the nature of the jobs in the freelance platforms; emergence of the COVID-19 related works. The phenomenon can be explained, perhaps, by the fact that the period since the virus outbreak is yet too short for the major changes to occur/be noticeable in the freelance market. The services that are traditionally easier to provide remotely still continue to be more demanded, while longer period is needed for non-traditional services to transition and build their solid demand in the freelance market.

Appendix 1: Interview guide

Introduction: Good afternoon, my name is _____. Thank you for agreeing to talk to me about your experience as a freelancer. This interview is a part research conducted for United Nations Development Programme Armenia. The goal is to assess overall demand in the world freelance market in COVID-19 conditions and identify freelance opportunities for professionals based in Armenia. I can assure you that whatever you say here will remain strictly confidential. The discussion is being recorded to make sure that we don't miss something important, but no one except myself and my research colleagues will have access to this record.

Questionnaire for freelancers based in Armenia

1. Please tell me about your experience as a freelancer. How long are you engaged in freelance work?
Which freelance platforms do you use?
2. Why you use that/those platform(s)? What are the opportunities and challenges of using them?
3. What other platforms do you know? Why you do not use them?

4. Do you think it is possible to earn stable monthly income if a professional in your field is engaged only in freelance work?
5. What are the opportunities of working as a freelancer in your field and in general?
6. What are the difficulties of working as a freelancer in your field and in general?
7. What are the main skills and competencies a specialist should have to be able to enter freelance job market?
8. According to you, which are the most, demanded professions and skills in the current freelance market?
9. Have you noticed any change in the freelance market (both in your field and in general) in pre and post COVID-19 period? If yes, could you please elaborate?
10. Could you please briefly describe the roadmap an individual can use to enter freelance job market?

Thank you for agreeing to take part in the interview!