



THE GLOBAL OPPORTUNITY IN ONLINE OUTSOURCING

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ABBREVIATIONS

AMT	Amazon Mechanical Turk
ATM	automated teller machine
BPO	business process outsourcing
CAGR	compound annual growth rate
FDI	foreign direct investment
KPO	knowledge process outsourcing
ICT	information and communication technology
IT-BPM	IT and business process management
ITO	information technology outsourcing
NASSCOM	National Association of Software and Services Companies (India)
NGO	nongovernmental organization
SACCO	Savings and Credit Co-Operative
SME	small and medium enterprise
UHRS	Universal Human Relevance System

All dollar amounts are U.S. dollars unless otherwise indicated.

EXECUTIVE SUMMARY

Online outsourcing (OO) has become a promising alternative to traditional employment in today's digital era. It has transformed where, when, and how work is performed. For employers, OO provides broader access to specialized skills, more flexible and faster hiring processes, and 24-hour productivity. For workers, this form of outsourcing has created new opportunities to access and compete in global job markets, from anywhere at any time, as long as they have computer and Internet access. This study focuses on OO's potential as a new and innovative channel for socioeconomic development for developing country governments and development practitioners, particularly in terms of youth employment, services exports, and participation in the digital economy.

DEFINING ONLINE OUTSOURCING

Online outsourcing refers to the contracting of third-party workers and providers (often overseas) to supply services or perform tasks via Internet-based marketplaces or platforms. These technology-mediated channels allow clients to outsource their paid work to a large, distributed, global labor pool of remote workers, to enable performance, coordination, quality control, delivery, and payment of such services online.

Online outsourcing is highly relevant to impact sourcing, as it could significantly benefit disadvantaged individuals in low employment areas. This definition also encompasses two major segments:

- *Microwork*, where projects and tasks are broken down into microtasks that can be completed in seconds or minutes. Microworkers require basic numeracy and literacy skills, for example, for image tagging, text transcription, and data entry. Workers are typically paid small amounts of money for each completed task, and barriers to entry are lower than in online freelancing, making it particularly attractive to unemployed and underemployed individuals with no specialized skills.
- *Online freelancing*, where clients contract professional services to distributed third-party workers. Online freelancing often requires a higher level of expertise than microwork, with workers typically possessing technical or professional skills. Online freelancing tasks tend to be larger projects that are performed over longer durations of time—hours, days, or months. Examples include graphic design, web development, and technical report writing.

Microwork and online freelancing often overlap, the major difference between them often being the size and complexity of the tasks, as well as the compensation offered. Some of the most popular OO platforms include Freelancer, Upwork, Crowdfunder, Amazon Mechanical Turk (AMT), Samasource, and CloudFactory.

The two primary archetypes among OO firms are "open services platforms" and "managed services platforms". In the former, intermediary firms offer an online marketplace where workers and employers can connect and negotiate directly. Employers pay a service fee to post jobs on the marketplace and workers can be selected based on the price they will charge or on their reputation. On the other hand, under managed services platforms, the relationship with both employers and workers are managed directly. Managed services platforms take care of finding and hiring individual workers, exercise a degree of ownership of the work, and perform quality control for clients. The boundary between open

and managed services platforms is blurred but, currently, the major players in OO are open services platforms.

Because of the dynamic and rapidly evolving nature of the OO sector and the type of tasks posted on these marketplaces, the study segmented the complexity of the tasks based on the skills and education or training required as a proxy to determine task complexity. *Low complexity tasks* refer primarily to microwork, where no specialized skills or training are required; *medium complexity tasks* require basic literacy, numeracy, and some level of soft skills, often including both microwork and online freelancing tasks; *high complexity tasks* are primarily associated with online freelancing that requires specialized technical knowledge, and that often involves vocational training or a university degree.

THE DRIVERS FOR ONLINE OUTSOURCING

Online outsourcing firms report that the private sector is currently driving most of the demand, but public sector demand for OO is a potential source of future growth. Demand for online freelancing is usually driven by small enterprises, while the demand for microwork is driven by medium and large enterprises, with the majority of clients for both segments in the private sector in the developed world. Of the businesses using Elance (to be merged eventually into Upwork) in 2011, 85 percent had fewer than 10 employees, and 75 percent of all employer demand came from four countries: Australia, Canada, the United Kingdom, and the United States. Some large multinational technology companies are also setting up in-house microwork marketplaces

Just under half of the demand for OO is currently driven by the technology industry. The remainder of the demand is broadly spread: 20 percent is driven by media and entertainment, 13 percent by manufacturing, with financial services, retail distribution, travel and hospitality, and healthcare accounting for the remainder. Although software and web development still account for a large percentage of demand for OO services, over time demand is becoming more diversified over a greater number of skills rather than being concentrated within only a few.

Client demand for OO services may be limited by a perception that skilled workers are hard to find, and it is possible that misperception of poor quality is limiting demand from firms that are not currently using OO marketplaces. Big data represents a unique opportunity for OO. Expert interviews for this study confirm that an increasing number of governments are joining the open data movement. Along with the growing needs of businesses for data gathering, cleaning, mining, and packaging, the use of open data by governments will fuel the growth in demand for OO services.

The majority of global private sector demand for OO services appears to come from Australia, Canada, the United Kingdom, and the United States, although this demand-base is expanding. In most cases, OO in the developing world is driven by clients in the developed world.

However, not all countries and individuals will be able to leverage the promise of OO for employment and economic growth equally. Several questions arise, including:

- What contribution could OO make in strengthening employment markets, particularly for women and disadvantaged youth who may be lacking in the basic resources or conditions to participate equally in society?
- To what extent will emerging markets be able to take advantage of OO?
- How can workers benefit from the economic and social impacts of OO?
- What are the potential risks of OO?

In order to understand the opportunity for developing countries, this study estimated the current size of the market and projected its growth, and profiled OO work through a combination of desk research and structured interviews with academics, online workers, firms, and industry analysts to better understand OO's potential impact on human capital and employment. The study also conducted focus group interviews with online workers in Kenya to gather additional insight into the socioeconomic impacts of OO, and carried out case studies in Kenya and Nigeria.

ESTIMATING THE MARKET AND ITS GROWTH

Estimating the current market size and projecting is challenging because of the limited availability of public data, the nascent state of the industry, and the high uncertainty regarding how the industry will evolve. Nevertheless, the study estimates that gross service revenue within the OO industry was about \$2 billion in 2013, with 48 million registered OO workers, 10 percent of whom are considered to be active. The microwork market is dominated by two firms, both of which follow open services platform business models: Amazon Mechanical Turk and CrowdFlower. Industry experts suggest that these firms currently have combined annual global gross services revenue of about \$120 million; together they form about 80 percent of the microwork market. The online freelancing market, which grossed about \$1.9 billion in 2013, is over 10 times larger than the microwork market. Industry experts suggest that the top three firms (Upwork, Freelancer, and Zhubajie/Witmart) form about half of the entire OO market. Upwork is the clear leader of these three firms, with \$750 million in combined revenue in 2013.

The market size for online freelancing is projected to grow to \$4.4 billion in 2016, while the market for microwork is estimated to reach \$0.4 billion. Thus the total OO industry is projected to be \$4.8 billion in 2016. Medium-term models estimate that, in 2020, the OO industry will generate gross services revenue in the range of \$15 billion to \$25 billion.

PROFILING ONLINE OUTSOURCING WORKERS

Online outsourcing is a global industry with workers drawn from across the world. The distribution of workers is similar for both microwork and online freelancing. Almost two-thirds of workers currently come from the United States (which has the most workers), India, and the Philippines. In Europe, Serbia and Romania contribute high numbers of OO workers relative to their total populations. Africa still has a small representation, but South Africa and Kenya are the leading countries on the continent.

Workers are predominantly male and below the age of 35. Education levels differ significantly depending on whether they engage in microwork or online freelancing: 75 percent of online freelancers have a university degree, but only 33 percent of microworkers do. On average, most workers engage in this type of work for fewer than 20 hours per week. Income generation is the most common motivating factor in all cases. Most microworkers see OO as a means of earning supplementary income; by contrast almost half of online freelancers report OO to be their only means of income.

SOCIAL AND ECONOMIC IMPACTS ON WORKERS

The economic impact of OO varies significantly across platforms, according to type of work, and level of engagement. A part-time Filipino online worker reported earnings of \$3–4 per hour on oDesk (rebranded as Upwork), performing tasks such as transcription, data entry, and basic administrative services. In contrast, an experienced Nigerian online freelancer reported earnings of \$20 per hour for software development and website design. At the high end, online freelancers consulting on patents or venture capital can earn more than \$40 per hour (Horton 2012).

Initial findings suggest that full-time online workers in Kenya, Nigeria, and India earn salaries that are comparable to, or higher than, their peers in traditional work. Although salaries vary across contexts, spending patterns appear to be similar. In focus groups and structured interviews, online workers in Kenya and Nigeria reported that they spent their additional income on rent, food, work expenses (including access to a computer and the Internet), further studies, and supporting other family members.

As well as generating additional income, online workers reported that OO allows them to develop skills and progress professionally. Interviews suggest that they develop both technical skills (for example, basic IT proficiency and Internet literacy) and soft skills (for example, the ability to communicate professionally, manage their own time, and work to a deadline). Managed service platforms put in place specific training programs to help develop these required skills. For example, CloudFactory runs compulsory weekly meetings for workers to discuss management skills and long-term career aspirations. In online marketplace models, such as Amazon Mechanical Turk and oDesk, workers need to start with a basic skill set; these skills are refined through experiential on-the-job learning.

In focus groups and structured interviews, online workers reported that they rely on friends and peers to learn new skills (for example, IT literacy, communication skills). The study found that online workers often form strong online communities (using forums and social platforms such as Facebook) to help each other develop skills and navigate the system.

However, OO also comes with risks: online workers are exposed to greater career uncertainty and have fewer protections than workers in traditional employment. Online outsourcing does not clearly fit into traditional employment legislation (for example, labor policies, laws on employees' protection and benefits, and tax regulation). Therefore, online workers in most countries do not receive the benefits of unionization, collective bargaining, social benefits, or legal protection such as minimum wage laws. However, the online workers consulted in this study did not express concern about these issues, and traditional freelancers also experience some of these risks. This might be because workers may not be aware of these issues. Ethnographic research of AMT workers (known as Turkers) suggests that they do not want government regulation of OO, and surveys of Elance (to be merged eventually into Upwork) show that 90 percent of online freelancers are as happy, or happier, than traditional employees. Furthermore, industry experts report that regulating the industry in its early stages could impede its growth.

Youth unemployment remains a major development issue for many countries in regions such as the Middle East, North Africa, Sub-Saharan Africa, and Southeast Asia. Online outsourcing is an emerging industry that could potentially contribute to addressing the youth unemployment challenge. The economic impact of OO varies significantly across platforms, type of work, and level of engagement. Initial findings, however, suggest that it can have a significant effect at the household level for some individuals. OO also offers nonfinancial benefits: a flexible working schedule allows individuals to take better care of their families, continue to study, or start their own businesses while working and earning a salary. Furthermore, it provides opportunities for on-the-job learning and skills development. However, for many disadvantaged youths who lack technical professional skills, the barrier to entry for online freelancing is high with the vast majority of current workers possessing a tertiary or postgraduate degree.

Online outsourcing appears to be driving positive social change for women. Women in focus groups and structured interviews reported that OO contributes toward gender equity because it is more compatible

with some countries' cultural and social norms than traditional employment. For example, in India, female online workers use OO as a way of earning cash while caring for children and elderly family members, and Egyptian women from traditional Islamic households use online freelancing as an alternative to working in male-dominated workplaces.

ASSESSING COUNTRY READINESS FOR ONLINE OUTSOURCING

A structured assessment framework, and an online toolkit is available at www.ictforjobs.org, in order to assist policy makers and development practitioners assess a country's readiness to leverage the OO opportunity. The readiness assessment framework has four main categories – talent availability and quality, cost, infrastructure, and enabling environment. These categories are further divided into factors and subfactors as appropriate. The OO toolkit provided is easy to use, web based, and provides a quick readiness assessment in terms of a country's relative national strengths and weaknesses in order to participate in the OO industry. It allows the user to model a country's readiness position for different market segments, based on the country's targeting of low, medium and high complexity tasks, and its associated market segments.

THE ROLE OF GOVERNMENTS

Governments can play a significant role in maximizing their own country's readiness for OO, and take a number of actions to promote its growth. These include promoting and implementing positive policies and removing legislative and regulatory barriers to stimulate the growth of the OO industry:

Developing a relevant strategy for the targeted markets. The OO industry development program a country undertakes will depend to a large extent on whether the country targets either (or both) online freelancing or microwork and, to a lesser extent, on either (or both) open or managed services marketplaces. Online freelancing workers need to have significantly higher skills for higher complexity tasks, while microwork typically requires basic computer and Internet literacy (and the associated language) skills for lower complexity tasks. The microwork segment is also more sensitive to the country's cost structure, since lower complexity tasks could be competed for by developing country workers who could generally offer more competitive rates for work. Open services platforms also require more extensive training programs in general, unlike managed services platforms in which training is provided by the firms. Countries with larger geographies and population sizes are generally in a better position to target multiple segments and marketplaces, given their higher diversity in terms of capabilities and resources, while smaller countries may have to be more selective and targeted. A country's industry development strategy could also include an intermediary or agency approach, whereby international or local OO firms are encouraged to start up operations in the country. Countries may also opt for a phased approach by targeting lower complexity tasks in the initial stage, and moving up the value chain in the later stages.

Ensuring the supply of well-trained workers. Although a potentially large global pool of online workers exists, there are concerns about the level of skills and reliability of these workers, particularly in developing countries. All forms of OO require basic IT proficiency and most platforms require fluency in English. Online freelancing also requires specific technical skills. Examples of initiatives that governments can take to support the development of in-country talent and to promote participation of workers in this industry include setting up a national-level accredited training and certification program to prepare workers for OO, including basic IT and English skills, and developing short-term training to target specific skills gaps.

Raising awareness. Governments should organize workshops and run online advertising campaigns to raise awareness among potential workers. Public events can teach potential workers how to navigate the complex OO system, including how to register on different platforms, how to get paid, and how to market themselves to find work.

Expand access to, and quality of, infrastructure. In many developing countries, infrastructure remains a major bottleneck to engaging in OO, especially for rural residents. Policies to expand access to fast, affordable, and reliable electricity and Internet are key for OO industry development, particularly for rural populations. Other policy initiatives to support OO development include utilizing existing investments to create coworking spaces to provide potential workers with access to computers and the Internet, and partnering with existing nongovernmental organizations (NGO) or governmental programs that already provide IT infrastructure.

Generating demand. Industry experts and OO firms expect the growth of the industry to be limited by demand generation rather than worker supply, because the supply of workers is growing faster than demand. This is particularly the case for the platforms that train and hire disadvantaged young people, most of which are still in nascent stages. Governments in developing countries are unlikely to be able to incentivize global demand but they can raise awareness of OO in their local private sectors through public events, and can stimulate local demand by putting in place tax regimes for local firms to hire online workers. Finally, demand could also come from the government itself through, for example, utilizing OO platforms to conduct digitization of government records. However, currently, to access public sector contracts, outsourcing firms must overcome the lengthy and complex procurement processes that most governments have in place.

Taxation. Uncertainty exists around tax requirements for OO workers. Most workers do not pay taxes on their earnings, but report that such taxes would create a barrier for growth of the industry. Some countries, however, have enacted tax-benefit policies for online workers. For example, Bangladesh has a policy where all earnings from OO work are currently tax free, encouraging more workers to participate.

Minimum wage and part-time work laws. In applying minimum wage laws on OO workers, governments need to make an explicit decision between the social good of ensuring a fair minimum wage for workers and the potential economic impact that minimum wage laws may have on the growth of the OO industry. Governments also need to make decisions on laws concerning part-time work. Some countries ensure that part-time workers, who have worked for a specific length of time, receive the same rights and benefits as full-time employees. In determining which policy actions to take, governments should also be aware that although laws on minimum wages and part-time work may protect workers from exploitation, they are not universal and can create asymmetries in the market.

Ease of doing business. Common barriers cited by OO firms interested in setting up businesses in local markets include difficulty in obtaining work permits, administrative bureaucracy in formally registering a company, and difficulty in registering bank accounts. Governments can address such barriers with policies that would improve the general business environment that, in turn, would promote private sector growth and employment beyond just OO.

CHAPTER 1. WHAT IS ONLINE OUTSOURCING?

Online outsourcing (OO) has become a promising alternative to traditional employment in today's digital era. It has transformed where, when, and how work is performed. For employers, OO provides broader access to specialized skills, more flexible and faster hiring processes, and 24-hour productivity. For workers, this form of outsourcing has created new opportunities to access and compete in global job markets, from anywhere at any time, as long as they have computer and Internet access. This study focuses on OO's potential as a new and innovative channel for socioeconomic development for developing country governments and development practitioners, particularly in terms of youth employment, services exports, and participation in the digital economy.

DEFINING ONLINE OUTSOURCING

In this study, online outsourcing (also referred to as paid crowdsourcing or online work) is defined as:

The contracting of third-party workers and providers (often overseas) to supply services or perform tasks via Internet-based marketplaces or platforms. These technology-mediated channels allow clients to outsource their paid work to a large, distributed, global labor pool of remote workers, to enable performance, coordination, quality control, delivery, and payment of such services online.

Online outsourcing is highly relevant to impact sourcing, since the latter refers to any form of outsourcing that “benefits disadvantaged individuals in low employment areas” (Bulloch and Long 2012). As discussed throughout this study, OO could be a highly socially responsible form of outsourcing that could bring significant positive impact to these individuals. However OO's social and economic impact depends on the profile of workers, the financial remuneration that they receive, and the skills that they develop. This study explored existing impact sourcing models within OO, and also looked beyond this sector. This definition also encompasses two major segments:

- *Microwork*, where projects and tasks are broken down into microtasks that can be completed in seconds or minutes. Microworkers require basic numeracy and literacy skills, for example, for image tagging, text transcription, and data entry. Workers are typically paid small amounts of money for each completed task, and barriers to entry are lower than in online freelancing, making it particularly attractive to unemployed and underemployed individuals with no specialized skills. Monitoring the quality of the work takes place largely automatically through algorithms. Examples of microwork firms include Amazon Mechanical Turk (AMT), CrowdFlower, CloudFactory, and Samasource.
- *Online freelancing*, where clients contract professional services to distributed third-party workers. Online freelancing often requires a higher level of expertise than microwork, with workers typically possessing technical or professional skills. Online freelancing tasks tend to be larger projects that are performed over longer durations of time—hours, days, or months. Examples include graphic design, web development, and technical report writing. The evaluation of the quality of the generated work is typically done by supervisors, and not through algorithmic or automated means. Many online freelancers have pursued some type of higher education and hold a university degree or a diploma. Financial remuneration tends to be higher for online freelancers than for microworkers. Examples of OO platforms providing freelancing work are Upwork (formerly Elance and oDesk),¹ Freelancer, and Zhubajie/Witmart.

There is often significant overlap between microwork and online freelancing. Tasks such as writing blogs or product descriptions, typing data into a Word document, or transcribing an audio file do not require specialized skills and can be found in traditional microwork marketplaces (for example, Amazon Mechanical Turk) as well as in traditional freelancing marketplaces (for example, Upwork).

The major difference between microwork and online freelancing is often the size and complexity of the tasks, as well as the compensation offered. In general, microwork consists of low complexity tasks that require basic literacy and numeracy, but no specialized or technical skills. Online freelancing consists of high complexity tasks that require specialized technical knowledge, often gained through vocational training or a university degree. Medium complexity tasks, which require soft and advanced language skills on top of basic literacy and numeracy, can be categorized as either microwork or online freelancing, depending on the time required to complete the tasks, degree of skill required, and remuneration provided. Tables 1.1 and 1.2 illustrate some of the most popular microwork and online freelancing marketplaces.

Table 1.1 – Overview of the Largest Online Freelancing Marketplaces (2014)

Platform	Year of Inception	Countries of Operation	No. of Registered Users	Examples of type of tasks	Services Provided	Compensation	Means of Payment
Freelancer	2009	Global	11,000,000	<ul style="list-style-type: none"> • Create an iPhone app • Design welcome page for website • Develop a corporate identity for a start-up 	Data not available	No minimum	<ul style="list-style-type: none"> • Paypal • Moneybooker • Debit MasterCard • Bank wire transfer
Zhubajie	2006	China, USA	9,370,000	<ul style="list-style-type: none"> • Develop and conduct a market research survey • Write a marketing slogan • Design black tea logo and product packaging 	Clients: <ul style="list-style-type: none"> • Offer free consultation for clients Workers: <ul style="list-style-type: none"> • Provide works with tokens to bid for job once profiles are complete. More are available upon completing tasks on social media or otherwise bought 	Data not available	<ul style="list-style-type: none"> • Paypal • Bank transfer (USA account)
oDesk	2005	Global	4,500,000	<ul style="list-style-type: none"> • Research e-mail addresses within the soccer industry • Fill trademarks, copyrights and patents • Research and write small articles 1 to 3 pages 	Clients: <ul style="list-style-type: none"> • Allows clients to pre-screen candidates before hiring • Monitors workers' screen activity Workers and Clients: <ul style="list-style-type: none"> • Offer payroll services 	<ul style="list-style-type: none"> • Minimum fixed wage of \$5 • Minimum hourly rate of \$3 Available only for oDesk payroll workers³⁹: <ul style="list-style-type: none"> • Group health insurance • 401 (k) retirement plans 	<ul style="list-style-type: none"> • Direct deposit/ACH • Wire transfer • Paypal • Payoneer • Skril
Eance	1999	Global	3,500,000	<ul style="list-style-type: none"> • Design and create a website • Write blog on fashion and jewelry • Build complex Excel macros 	Workers and Clients: <ul style="list-style-type: none"> • Offers payroll services 	<ul style="list-style-type: none"> • Minimum fixed wage of \$20 • Minimum hourly rate of \$3 Available only for Eance payroll workers: <ul style="list-style-type: none"> • Health & Wellness benefits: Medical, Dental, Vision • Dependent Care Flexible Spending Accounts • 401(k) Retirement Plan • Voluntary Insurance Programs • Employee Assistance Program 	US freelancers <ul style="list-style-type: none"> • Direct deposit/ACH • Check • Paypal • Payoneer International freelancers <ul style="list-style-type: none"> • Local currency transfers • US dollar transfer • Paypal • Payoneer • Skril
Guru	1998	Global	2,000,000	<ul style="list-style-type: none"> • Enter data from 5000 resumes into spreadsheets • Translate 15 words and 3 sentences from English to Spanish • Keep books for established business with Quickbooks 	Workers: <ul style="list-style-type: none"> • Provides job matches for freelancers to ensure they do not miss out on work 	Data not available	<ul style="list-style-type: none"> • Direct deposit (USA Bank accounts) • Paypal • Prepaid MasterCard • Wire transfer (Non- USA bank accounts)
Peopleperhour	2007	Global (150 countries)	250,000	<ul style="list-style-type: none"> • Do telemarketing in Spanish • Record English language voiceover • Professionally edit a video 	Data not available	Data not available	<ul style="list-style-type: none"> • Paypal • Bank transfer

Source: Publicly available data from each firm.

Note: The number of registered workers may not represent the number of active workers regularly performing tasks on each marketplace. Eance and oDesk have merged and launched Upwork in May 2015.

Table 1.2 – Overview of the Largest Microwork Marketplaces (2014)

Platform	Year of Inception	Countries of Operation	No. of Registered Users	Types of tasks	Services Provided			Compensation	Means of Payment
					Infrastructure	Training	Other		
CrowdFlower	2010	Global	5,000,000	<ul style="list-style-type: none"> Search for terms and record the search results Find descriptions of businesses on websites 	Data not available	Workers: <ul style="list-style-type: none"> Offer training to online workers responsible for quality control 	Clients: <ul style="list-style-type: none"> Transform work into tasks that workers can understand Workers: <ul style="list-style-type: none"> Score workers on trust based on test questions hidden in datasets 	<ul style="list-style-type: none"> \$1-\$3/ hour 	<ul style="list-style-type: none"> Paypal Payza Ebay gift card Amazon gift card Facebook credit
Amazon Mechanical Turk	2005	Global with most coming from India and USA	500,000	<ul style="list-style-type: none"> Extract items from a shopping receipt Read a question and determine the quality of grammar, completeness and credibility Illustrate a children's story book with clip arts 	None	None	Workers: <ul style="list-style-type: none"> Allow clients to test workers, or have workers complete a minimum percentage of tasks correctly in order to qualify 	<ul style="list-style-type: none"> No minimum 	Workers in USA: <ul style="list-style-type: none"> U.S. bank account Amazon.com gift certificate balance India Workers <ul style="list-style-type: none"> Bank checks denominated in Indian Rupees Amazon.com gift certificate
Samasource	2008	Kenya, Uganda, India, Ghana and Haiti	5,500	<ul style="list-style-type: none"> Flag social media mentions Answer customer questions on user-based blogs and communities Compare competitors' pricing 	Workers: <ul style="list-style-type: none"> Provide computers and connectivity through their local delivery centers 	Workers: <ul style="list-style-type: none"> Provide skills training and coaching to workers 	Data not available	<ul style="list-style-type: none"> \$1-\$3/ hour 	<ul style="list-style-type: none"> Samasource makes payments to delivery centers via wire transfer. Samasource delivery centers use a range of methods to pay workers, including mobile money
CloudFactory	2008	Nepal and Kenya	3000	<ul style="list-style-type: none"> Convert audio to text Gather business contact information Obtain information from medical records 	None	Workers: <ul style="list-style-type: none"> Provide skills training and weekly coaching meetings 	Community service every 6 weeks	<ul style="list-style-type: none"> Maximum of \$40 per week 	<ul style="list-style-type: none"> Bank transfer
Microworkers	2009	Data not available	Data not available	<ul style="list-style-type: none"> Subscribe to Youtube channel Create a Bingo account Register on http://goo.gl/54oBsh 	Data not available	Data not available	<ul style="list-style-type: none"> \$1 Sign up bonus 	<ul style="list-style-type: none"> < \$0.1/task 	<ul style="list-style-type: none"> Paypal Moneybookers

Source: Publicly available data from each firm.

Note: The number of registered workers may not represent the number of active workers regularly performing tasks on each marketplace.

The definition of OO above may include other related industries, but they fall outside the scope of this study. These include:

- Traditional onshoring, nearshoring or offshoring for outsourcing of IT, business process and knowledge process outsourcing (ITO/BPO/KPO)**, where clients directly contract business services (for example, customer care or human resources management) or IT services to third-party outsourcing companies. This traditional industry is now also known as IT and business process management (IT-BPM). The size of the traditional outsourcing industry is several times larger than OO. The types of tasks contracted to traditional and OO firms are often similar, as they are for ITO/BPO/KPO services, especially for nearshoring/offshoring firms as they provide these services across borders. The main difference is that traditional outsourcing firms provide managed services directly to their clients, hire employees and contract workers, and require workers to be centralized in the same physical location. Online outsourcing is a new approach

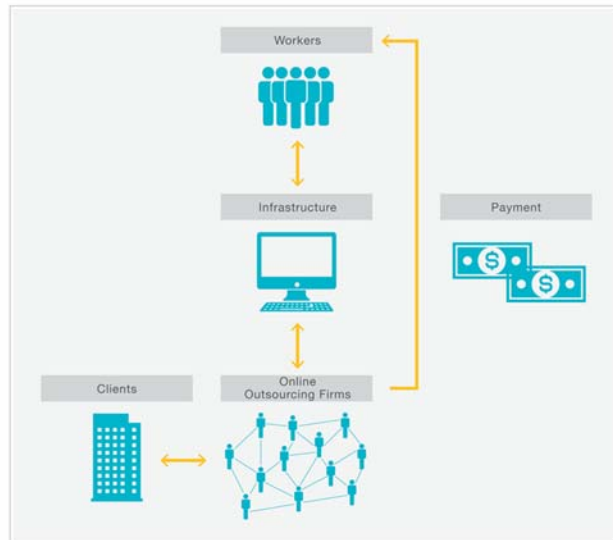
for providing ITO/BPO/KPO services, and can deliver faster and more flexible access to a broader pool of workers than traditional approaches, often at lower cost. It remains true, however, that traditional outsourcing approaches can often conduct a greater range of tasks and have stronger formal mechanisms to guarantee the quality of the work than OO. As OO grows, it is anticipated that it will increasingly cannibalize work currently conducted by traditional outsourcing firms, although it is expected that the size of the BPO and ITO markets will remain substantially bigger than that of OO in the short to medium term.

- *Gaming services*, where an online game player hires someone to play the game on their behalf. Example tasks include goldfarming, where a “worker” plays the game to produce virtual currency within the game, which they sell in exchange for real money; and powerleveling, where an individual is paid cash to take control of a client’s character and play the game, to build up the skill or power of the character within the game (Lehdonvirta and Ernkvist 2011). This study excluded this industry from its scope, given the different ethical considerations and incentives for this kind of work in terms of the promotion of employment in developing countries.
- *Cherry blossoming (or crowd turfing)*, where people perform small digital tasks to help increase the online profile and brand of firms (Lehdonvirta and Ernkvist 2011). Examples of these tasks include “liking” a firm’s Facebook page and following its Twitter account. At times, this contracting takes place through microwork marketplaces and, therefore, aspects of this type of activity fall within the definition of OO, but it can also occur through direct contacting from a marketing agency that has its own database of potential workers. This study did not include this industry given the different ethical considerations and incentives for such work.
- *Online marketplaces for physical services*, such as Uber and TaskRabbit. In these examples, the Internet is used to connect employers and workers, but the work requires some physical interaction between employers and workers. Example tasks include making deliveries, buying goods, and assembling furniture. In these models, workers are not able to access the global job market because work is not conducted online. Some firms (for example, Zhubajie/Witmart in China) run combined marketplaces for both OO and for physical services.

IDENTIFYING ONLINE OUTSOURCING BUSINESS MODELS

Five key elements are common to most business models within the OO industry (see Figure 1.1).

Figure 1.1 – Key Elements of Online Outsourcing Models



Online outsourcing firms connect employers and workers, often playing the role of transformer (that is, converting the work received from clients into tasks that can be shared with individual workers) and/or the role of aggregator (that is, convening the workforce needed to complete the work). After workers have completed the required tasks, these firms pay them for their services. Workers perform their work over the Internet, using either their own IT infrastructure or that provided by the OO firm. In addition, some OO firms also provide training.

The two primary archetypes among OO firms are "open services platforms" and "managed services platforms:"

- **Open services platforms.** These firms offer an online platform where workers and employers can connect and negotiate directly. Employers pay a service fee to post jobs on the platforms and workers can be selected based on the price they will charge or on their reputation (including past employer feedback).² This model results in a distributed global workforce with workers using their own computers to perform OO. Open services platforms have a broad range of target clients, ranging from individuals, startups, and small and medium enterprises (SMEs) to large multinational corporations.

Although most open services platforms have a similar core model, the additional or value-added services for workers and clients may vary. For example, some open services platforms offer worker training and online "accreditation" to help enhance a worker's credibility (for example, Upwork). An example of a service for clients that is not offered by all platforms is provision of reports on the performance of the OO worker based on random screenshots and keyboard and mouse activity to help clients monitor and supervise workers. In addition, although some open services platforms offer clients specialized skills and specific types of work, others offer the opportunity to fulfill more

general functions. For example, 99designs focuses on graphic design work, while Freelancer posts a wide variety of jobs.

- **Managed services platforms.** Some OO firms manage the relationship with both clients and workers directly, even though part of the outsourcing process is completed on their platforms. These managed services platforms take care of finding and hiring individual workers. They also exercise some degree of ownership over the work, and perform quality control for clients. In addition, workers are often provided with IT infrastructure and training in hard and soft skills by the firm. In contrast to open services platforms, the target clients for managed services platforms firms are mainly large multinational corporations. Examples of such marketplaces include Samasource³ and CloudFactory.

The boundary between open and managed services platforms is not always clear. For example, Rev.com, a marketplace that specializes in transcription and translation, selects workers carefully to ensure high-quality output and assigns them automatically to clients, thus eliminating the need for the worker to bid for the work. However, Rev.com does not provide quality control for clients, nor does it provide IT infrastructure or training for workers. The emergence of formal and informal managed services agencies further blurs the line between these two forms of outsourcing. These agencies procure work or tasks through existing marketplaces (for example, Upwork) and subcontract them to in-country OO workers. Such agencies provide varying degrees of managed services for their workers. Some take responsibility only for bidding for work and managing contracts, others provide computers and Internet access, and some even provide training for their workers.

Currently the major players in OO are open services platforms: the top three online freelancing firms (Upwork, Freelancer, and Zhubajie/Witmart) and the top microwork firm (Amazon Mechanical Turk) are open services platforms.

Infrastructure is a core component of all OO models. At the country level, this encompasses elements ranging from the cost, availability, and reliability of electricity and access to broadband Internet to the cost of mobile connectivity. At the level of the individual worker, infrastructure also includes access to computers. The potential for mobile and tablet-based OO to provide employment in developing countries has been discussed (World Bank 2012b), but workers and firms report that effective and efficient OO requires a laptop or desktop computer. The range of tasks that can be performed using only a mobile phone is limited, and computers are increasingly performing these basic tasks through machine learning algorithms. Although Upwork has a mobile presence, OO workers report that they use the mobile interface only to find and bid for work. Performing OO work accurately and efficiently requires a larger screen, a physical keyboard, and often a mouse, making a personal computer or laptop a core requirement for most OO.

Compensation and payment mechanisms are also essential, although the form varies across these different platforms. Some firms require a minimum wage for workers (for example, Upwork), while others allow the market to determine worker compensation (for example, Amazon Mechanical Turk). Some of the most popular forms of payment are financial transactions through online payment platforms such as PayPal, Skrill, and wire transfers, (for example, Upwork, Freelancer), Payoneer debit cards that use the MasterCard platform (for example, Freelancer), or Amazon store credit (for example, Amazon Mechanical Turk).

SEGMENTING ONLINE OUTSOURCING TASKS

Because of the dynamic and rapidly evolving nature of the OO sector and the types of tasks posted on these marketplaces, the study segmented the complexity of the tasks based on the skills and education or training required as a proxy to determine task complexity. This approach allows both microwork and online freelancing tasks to be categorized in a simple way while keeping the segmentation flexible enough to accommodate new tasks that might emerge.

Low complexity tasks refers primarily to microwork, where no specialized skills or training are required; *medium complexity tasks* require basic literacy, numeracy, and some degree of soft skills, often including both microwork and online freelancing tasks; *high complexity tasks* are primarily associated with online freelancing that require specialized technical knowledge that often involves vocational training or a university degree (Figure 1.2).

Figure 1.2 – Common Job Categories by Complexity

LOW COMPLEXITY	MEDIUM COMPLEXITY	HIGH COMPLEXITY
Sign-up websites		
Search + Click		
Bookmark Webpages		
Watch Videos		
Vote		
Download app + Install		
	Post Tweets	
	Post comments on Blogs/Websites/Forums	
	Write a Review	
	Data Entry & Administrative Support	
	Translation & Languages	
	Write an Article	
	Sales & Marketing	
	Design & Multimedia	
	Writing & Content	
	Product Sourcing and Manufacturing	
	Customer Service	
		Web & Software Development
		Network & Information Systems
		Engineering & Science
		Business, Accounting, HR & Legal

UNDERSTANDING DEMAND DRIVERS

This section considers the main factors driving demand for OO and assesses the role played by local, regional, and global demand. This assessment aims to ensure that projections for growth of OO reflect future potential demand, and a focus to anchor policy options that can be taken by governments to support the industry. The four primary elements driving demand are the needs of industrial sectors, the skills required, the explosion of data, and the needs of a group of particular countries.

TYPES OF CLIENT

Online outsourcing firms report that it is the private sector that is driving most of the demand, but public sector demand for OO is a potential source of its future growth. Although there are a few examples where governments in the United States and Europe are currently using OO—for example, the U.S. Food and Drug Administration (FDA) has used Amazon Mechanical Turk to process handwritten drug accident safety reports—most of the demand is private. However, public sector demand can be used to showcase to the private sector the opportunity that this new industry offers, thus helping kickstart the development of an indigenous OO industry in developing countries.

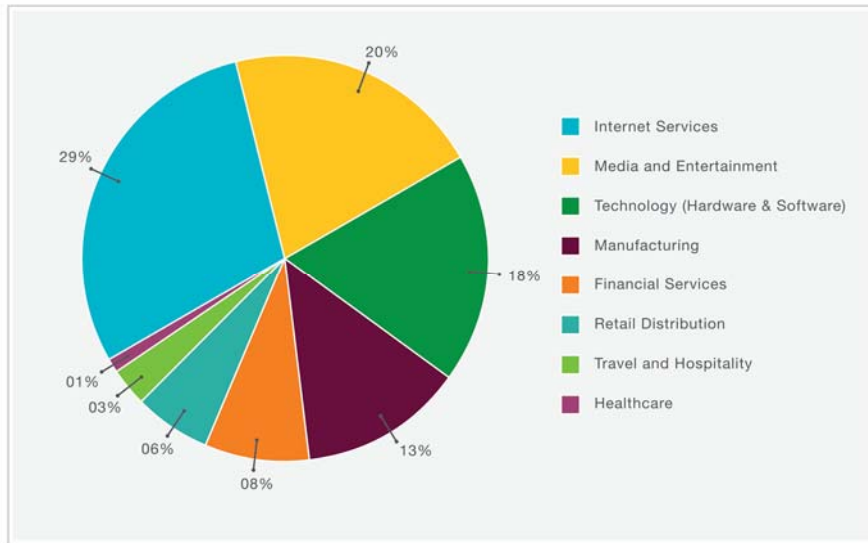
Within the private sector, demand for online freelancing is driven by SMEs—85 percent of businesses using Elance (to be merged eventually into Upwork) in 2011, for example, had fewer than 10 employees (Elance 2011). SMEs and startups report a range of different motivations for using online freelancing. The most common is that online freelancing allows a startup to access a specific required skill without hiring a full-time employee. There are also a variety of other motivations, such as reducing risk and flexibility. For example, an Internet-based startup in India reported using online freelancing as a low-risk way to try out new full-time workers. Online freelancers are given a few small pieces of work, and if their output is of sufficient quality, they are offered a long-term contract or a full-time position. Other firms report using online freelancing primarily because of the flexibility it offers to hire workers seasonally or by project.

In contrast, demand for microwork is driven by medium and large enterprises—80 percent of microwork clients generate more than \$10 million in annual revenue (Crowdsourcing.org 2012). Qualitative interviews with the global microwork marketplace CrowdSource confirm this fact. CrowdSource reports that large enterprises are driving demand for their services: these enterprises are interested in custom workforce solutions that drive down their costs and allow them to work more efficiently and quickly. Isolated examples of startups use microwork services as well. One U.S.-based technology startup employed Amazon Mechanical Turk workers to play the online game they were developing. This allowed their sophisticated machine-learning algorithm to learn from real human behaviors, allowing them to better model artificial intelligence.

Some large multinational technology companies are also setting up in-house microwork marketplaces. These allow them to “outsource” microwork tasks (for example, digitization and image tagging) while keeping commercially sensitive data in house. Such microwork platforms could also help technology companies comply with data protection laws (for example, when digitizing medical records). Public information about these in-house marketplaces is limited, however. The best-known example is Microsoft’s Universal Human Relevance System (UHRS), a marketplace originally designed to improve the Bing search engine, which is owned by Microsoft.

Just under half of the demand for OO is currently driven by the technology industry (including Internet services such as e-commerce as well as hardware and software technology) (Crowdsourcing.org 2012). The remainder of the demand is broadly spread: 20 percent is driven by media and entertainment, and 13 percent by manufacturing, with financial services, retail distribution, travel and hospitality, and healthcare accounting for the remainder (Figure 1.3).⁴

Figure 1.3 – Demand Drivers by Industry Sector



Source: Crowdsourcing.org 2012.

Note: Data are based on the percentage of revenue from each sector from a survey of 15 online outsourcing marketplaces.

SKILLS

Although software and web development still account for a large proportion of demand for OO services, over time demand is becoming more diversified with a wider range of skills required. This study found that, of the jobs posted on oDesk (rebranded as Upwork) on June 6, 2014, 40 percent corresponded to software or web development. As OO matures, it is increasingly becoming a long-tail market (Anderson 2006) where a large number of different skills are required, but only a relatively small number of each skill set are purchased. oDesk reported that skills concentration is decreasing over time (in 2007, four skills formed 90 percent of the market; in 2013, 35 skills formed 90 percent). Moreover, those with specialized skills are demanding higher wages (oDesk 2013c). In 2013, demand on oDesk was growing faster for skills involving social media—annual demand for Pinterest skills were growing at 415 percent, academic writing at 312 percent, and design (animation and modeling) at 233 percent (oDesk 2013b). Freelancer showed similar trends between Q4 2013 and Q1 2014: the fastest growing job categories were 3D rendering, ghostwriting, and software development (Freelancer.com 2014).

Client demand for OO services may be limited by a perception that skilled workers are hard to find. Although industry experts reported that the perceived low quality of OO workers is limiting demand from new clients, firms actually using OO appear to be satisfied with the output they receive. Of firms using Elance in 2012, 73 percent reported that they were planning to hire more online freelancers (Elance 2012a). Qualitative interviews with major firms in this study suggest that over 80 percent of clients are repeat customers. On average, the level of spending of each “cohort” (that is, businesses that start using OO in a specific time period), remains stable over time, according to the executives of major OO firms, suggesting that employers continue to use the same high-quality workers that they initially find (or that for every firm that stops using OO, another firm expands its usage).

It is possible that misperception of poor quality is limiting demand from firms that are not currently using OO platforms. If this is the case, this demand-side driver could be addressed through a number of

policy options, including using public sector demand to demonstrate the quality of output. At the same time, it is important to ensure that there are enough high-quality workers who can respond to the demand and OO marketplaces can create a mechanism to provide equal opportunities for newly entered workers.

DATA EXPLOSION

An explosion in “big data” is currently taking place partly as a result of the increasing use of smartphones and tablets and rising global connectivity. In 2013, Boston Consulting Group reported that 90 percent of the stored data in the world had been created in the past two years, and that annual growth rate for data was between 40 and 60 percent (Dean et al. 2013).

Businesses have realized the huge opportunity that this trend offers for them to derive value from big data to improve operations and drive innovation and growth. Many firms have started to think about themselves as data managers and scientists, and are investing heavily in ways to embed big data analytics into existing business processes.

Industry experts forecast that this trend will continue in the future. The International Data Corporation (IDC) predicts that the big data technology and services market will grow at a 27 percent compound annual growth rate to reach \$32.4 billion by 2017—about six times the growth rate of the overall information and communication technology (ICT) market (IDC 2013).

Big data represents a unique opportunity for OO. Expert interviews for this study confirm that an increasing number of governments are joining the open data movement. Along with the growing needs of businesses for data gathering, cleaning, mining, and packaging, the use of open data by governments will fuel the growth in demand for OO services. Other possible contributors to growing demand include NGOs (see Box 1.1).

Box 1.1 – Contributions of Humanitarian and Emergency Relief Organizations to the Demand for Online Outsourcing

The flexible, low-cost, and rapidly scalable nature of OO is particularly useful in emergency and humanitarian settings. For example, the distributed workforce mobilized after the Haitian earthquake used CrowdFlower and Samasource marketplaces to help manage emergency text messages sent by people in Haiti (Mission 4636). Haitians were encouraged to send emergency text messages to shortcode 4636. Microworkers were employed to process text messages, translate them, categorize them, geolocate people, and send information back to humanitarian agencies in Haiti. In total, around 80,000 messages were received, with a median turnaround time of five minutes per message (Munro 2013). Because of the emergency nature of the response, no effective impact evaluation was conducted but a number of case studies and qualitative findings suggest that this service helped humanitarian agencies to deliver aid and emergency supplies to at-risk populations (Hester, Shaw and Biewald 2010).

Microworkers were initially unpaid volunteers, largely from the Haitian diaspora. Toward the second half of the initiative, a paid workforce was established in Haiti, funded by the U.S. State Department. In total, around 25 percent of the messages were processed by paid employees in Haiti (Munro 2013).

There is tremendous potential for humanitarian agencies to use microwork services to gather information from, communicate with, and provide employment (and income) for local populations to help channel and coordinate emergency responses.

Countries

The majority of global private sector demand for OO services comes from just four countries – Australia, Canada, the United Kingdom, and the United States (75 percent of all demand on Elance to 2014 came from those four countries, for example).⁵ Nevertheless, as the OO industry matures, the demand-base is expanding. Upwork reports that the top five fastest growing client countries in 2014 were Finland, China, France, Russia, and Sweden (Elance-oDesk 2014a).

Global demand also appears to be driven by Anglophone countries and clients. Four of the top five client countries on Elance (Australia, Canada, the United Kingdom, and the United States) were almost exclusively Anglophone. In the fifth (India), English is one of 20 officially recognized languages and is the preferred language for business transactions. There are examples of non-English language marketplaces, the largest being Zhubajie/Witmart, a Chinese language marketplace that claims almost 12 million registered freelancers and targets Chinese clients and workers. Isolated examples of Arabic language marketplaces exist on a smaller scale (for example, Taskty in the Arab Republic of Egypt and Nabbesh in Dubai), which target Middle Eastern clients and workers. Although the apparent dominance of the English language in requests for OO workers may simply reflect the fact that English is the current lingua franca on the Internet, it appears that developing countries with large English-speaking populations are best placed to benefit from the potential growth in this industry.

Workers and OO firms in Kenya and Nigeria report that very little of their work is driven by local or regional demand. In most cases, OO in the developing world is driven by clients in the developed world. There are isolated examples, however, where demand for OO is driven by local and regional small enterprises (for example, Jobreneur in the Palestinian Territories); these firms provide specialized services, such as Arabic language support.

Some OO firms have first relied on local demand, and targeted global clients only after having perfected their model in the local market. For example, WorkNHire in India was able to actively employ 15,000 online freelancers by targeting Indian clients alone, mostly startups and SMEs, who required graphic design, website development, and content writing.⁶ WorkNHire is currently expanding its portfolio by targeting clients from other countries, including the United States and the United Kingdom. Skillsmix in Nigeria is a new OO marketplace attempting to replicate a similar model.

CHAPTER 2. ESTIMATING AND FORECASTING THE MARKET

The opportunity for online outsourcing (OO) to transform economies and revolutionize models of employment has long been part of management speculation. It was first discussed in the *Harvard Business Review* in 1998 (Malone and Laubacher 1998). Elance entered the market in 1999 and Amazon Mechanical Turk followed in 2001 (Frei 2009). Despite this long history, the market is only now beginning to fulfill its potential. In 2013, at least 145 online outsourcing marketplaces or platforms were identified, although the true number is likely to be higher, given the potential number of small, targeted marketplaces that are not globally known (Karpie and Nurthen 2014).

The OO industry is now growing rapidly. In 2013, two of the largest online freelancing firms, Elance and oDesk, merged. In the same year, Freelancer became the first independent major OO firm to undergo an initial public offering (IPO). Online outsourcing firms are reporting extremely high growth, both in terms of hours worked and revenue. The three largest online freelancing firms (Upwork [formerly Elance and oDesk], Freelancer, and Zhubajie/Witmart), along with the two largest microwork firms (Amazon Mechanical Turk and CrowdFlower), are together estimated to have accounted for over \$1 billion in gross services revenue in total in 2013.⁷ oDesk reported a 60 percent increase in the number of hours worked between 2012 and 2013 (Karpie 2013); Freelancer reported net revenue growth of 77 percent in the financial year 2013 (Freelancer Limited 2014b).

The monetary value of the market can be defined in terms of net firm revenue (that is, the income generated by each OO firm) or gross services revenue (that is, the total value of all transactions that pass through each OO marketplace, which includes income generated by the firms and payments to workers). Given the focus on the potential for OO to create employment and income opportunities in developing countries, this report defines market size as gross services revenue, as this estimate accounts for worker income.

METHODOLOGY

Estimating the current market size and projecting its growth has proved challenging because of the limited availability of public data, the nascent state of the industry, and the high uncertainty regarding how the industry will evolve—including potential game-changing technological innovations.

This study relies on public data, where available, to assess the size of the market. Where public data were not available, estimates and assumptions based on interviews with OO firms and industry experts were used. In order to understand short-term and long-term growth of the OO industry, supply-side constraints were assessed and the OO industry was compared with similar technology-driven industries (for example, the BPO industry). The growth of OO is different to the growth of the outsourcing industry itself since the majority of the customers for OO are SMEs and not large corporations, which is the case for the outsourcing industry, and because it is more flexible and less capital intensive. Therefore, while the study borrows from the model of outsourcing for its overall framework, it applies a bottom-up analytical approach for projecting growth.

Given the uncertainty of the market's prospects, this methodology and the final estimates were stress-tested using the following combination of approaches:

- Comparing the methodology and estimates with approaches used by Staffing Industry Analysts, crowdsourcing.org (Crowdsourcing.org 2012), and the World Bank (to size the microwork market) (World Bank 2012a).
- Validating growth projections against forecasts retrieved from expert interviews with industry analysts and OO firms.
- Anchoring market projections on patterns observed in closely related and relatively more mature industries, such as the BPO industry and the cloud computing industry (PricewaterhouseCoopers 2005).

ESTIMATING THE CURRENT PENETRATED MARKET

Estimating the market involves both determining the approach for collecting available data and estimating missing data, as well as actually determining the market size.

APPROACH

A bottom-up approach was used, based on data collected through interviews with industry experts and OO firms and available public data. The approach consisted of:

- Compiling gross service revenue data from the top microwork and online freelancing firms: the three freelancing firms—Upwork, Freelancer, and Zhubajie/Witmart; and the two microwork firms—Amazon Mechanical Turk and CrowdFlower.
- Estimating the share of the market held by these firms: The study estimated that Upwork, Freelancer, and Zhubajie/Witmart form 50 percent of the global online freelancing market;⁸ Amazon Mechanical Turk and CrowdFlower form 80 percent of the global microwork market.
- Verifying and validating data against other publicly available estimates. For example, Staffing Industry Analysts estimated a total market size of \$1.6 billion in 2013 and \$2 billion in 2014 (Staffing Industry Analysts 2013).

MARKET SIZE

The study estimates that gross service revenue within the OO industry was \$2 billion in 2013, with 48 million registered OO workers, 10 percent of whom are considered to be active (Table 2.1).⁹

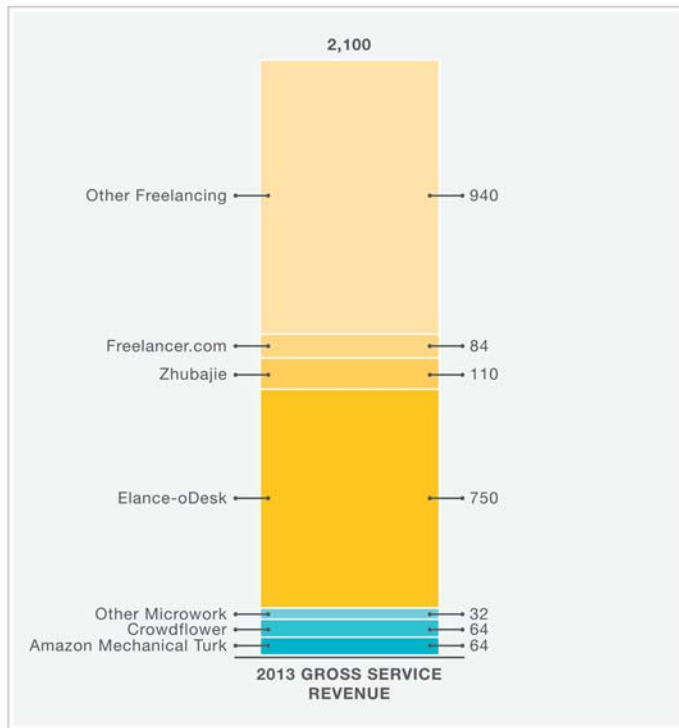
Table 2.1 – Estimated Global Online Outsourcing Industry Size, 2013

Category	No. of registered workers	Global penetrated market (US\$, millions)	No. of Active Workers
Microwork	5,800,000	160	580,000
Online freelancing	42,000,000	1,900	4,200,000
Total online work	47,800,000	2,060	4,780,000

Two firms dominate the microwork market, both of which follow an open services platform business model: Amazon Mechanical Turk and CrowdFlower. Industry experts suggest that these firms currently have combined annual global gross services revenue of about \$120 million; together they form 80 percent of the microwork market. A number of smaller firms—including open services platforms such as Microworkers.com and clickworker.com, and managed services platforms such as Samasource and CloudFactory—are also part of the microwork market.

The online freelancing market, which grossed about \$1.9 billion in 2013, is over 10 times larger than the microwork market. Industry experts suggest that the top three firms (Upwork, Freelancer, and Zhubajie/Witmart) form about half of the entire OO market. Upwork is the clear leader of these three firms, with \$750 million in combined revenue in 2013 (Elance-oDesk 2013).

Figure 2.1 – Estimated Global Online Outsourcing Penetrated Market, 2013, \$ million



Source: Dalberg analysis, based on Ipeirotis 2010a; Elance-oDesk 2013; The Founder Magazine 2012; Freelancer Limited 2014a.

Note: Amazon Mechanical Turk revenue data are not publicly available. Revenue was calculated by duplicating the approach of Ipeirotis: <http://www.behind-the-enemy-lines.com/2012/11/is-mechanical-turk-10-billion-dollar.html>; CrowdFlower revenue estimated to be equal to Amazon Mechanical Turk’s revenue, based on expert interviews; Zhubajie/Witmart’s revenue data are from 2012, as no reliable 2013 estimates were available. It is estimated that 80 percent of Zhubajie/Witmart’s revenue is from OO; the other 20% is from physical work contracted over the Internet. Elance and oDesk have also merged in March 2014, and rebranded as Upwork in May 2015.

As with the microwork market, a large number of other, smaller online freelancing firms are part of the system. Some of these firms target local or regional markets. These include Taskty in Egypt – which targets Arabic speaking workers and clients, and Chinese witkey marketplaces. *Witkey* is a generic term, common in China, for OO marketplaces. Zhubajie/Witmart is the largest Chinese witkey marketplace (China Internet Network Information Center 2013), and the only one that appears to be targeting a global market, through its English language website Witmart. Some smaller online freelancing firms target a niche market in terms of technical skills—for example, 99designs, which focuses exclusively on graphic design, and iWriter, which specializes in article-writing services.

Estimating the total number of workers currently involved in OO also proved challenging. Available public data are limited, and OO marketplaces report only the total number of registered workers, not whether workers are actively completing tasks on the marketplace. Furthermore, public data do not account for workers who register on multiple marketplaces.

Based on available data, however, it is estimated that there are currently 48 million workers globally registered on OO marketplaces, with about 10 percent of them (4.8 million in total) actively completing tasks.¹⁰ Just over 10 percent of active workers are registered with microwork marketplaces, and just fewer than 90 percent are registered with online freelancing marketplaces (see Table 2.1). There is no clear market leader in terms of number of registered workers. Freelancer appears to be the largest marketplace, currently reporting more than 15 million registered users; Upwork reports nearly 10 million registered workers; and Zhubajie/Witmart reports nearly 12 million.

PROJECTING MARKET GROWTH

Projecting market growth is essential to understand how to best take advantage of the many opportunities this new industry offers.

APPROACH

It is helpful to distinguish between short-term (to 2016) and medium-term (to 2020) estimates in determining the potential size of the market. Projections also need to consider supply-side constraints.

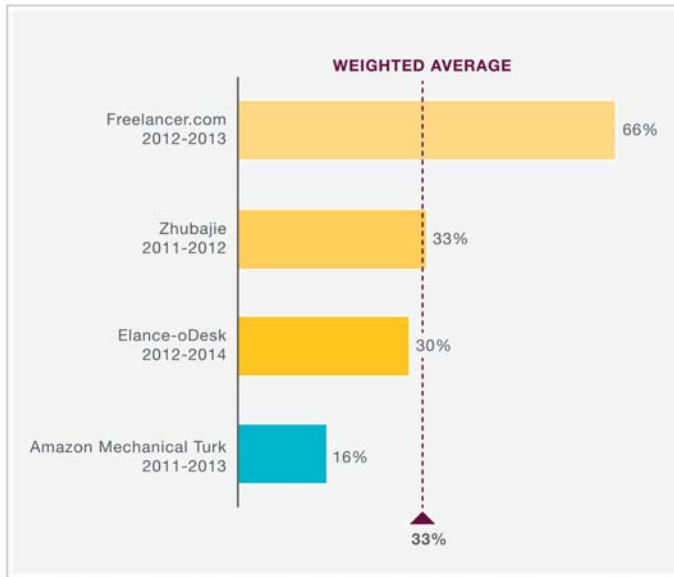
Short-Term Estimates

The short-term estimate for the growth of the OO industry is based on the assumption that, in the near future, it will continue to grow along the same growth trajectory it has experienced for the past two years (33 percent per year). Revenue of major microwork and online freelancing firms has grown rapidly in the past two to three years, and industry experts and OO firms report that they expect this growth to continue, with no major shocks (either positive or negative) in the short term.

The methodology comprised:

- Gathering current and historical revenue and workforce data from the top microwork and online freelancing firms globally.
- Calculating the compound annual growth rate (CAGR) for each firm mentioned earlier within the past four years (based on publicly available data).
- Calculating a weighted average CAGR for the industry as a whole, weighted by each firm's revenue in 2013 (see Figure 2.2), and applying this average going forward until 2016.

Figure 2.2 – Average Online Outsourcing Growth, 2011–2014, percent



Source: Dalberg analysis, based on historical revenue data from individual firms.

Historically, the microwork industry has shown similar rates of growth. Although growth in Amazon Mechanical Turk has slowed recently, this is probably the result of policy decisions made by the marketplace in 2012 to increase the stringency of identity requirements for worker registration. Workers and academics in India report that this is a major constraint to the registration of new workers on the platform. Up-to-date data on the revenue growth of the other major microwork marketplace (CrowdFlower) are not publicly available, although interviewees estimated that growth in this company is equal to (or greater than that of) Amazon Mechanical Turk.

Medium-Term Estimates

Medium-term growth of the overall market is a function of two factors:

- The rate at which clients adopt OO, that is whether the OO industry is still at an early stage in its development or whether it has reached a tipping point (Rogers 2010).
- The cannibalization rate of the BPO industry by OO.

Thus the study explored three scenarios based on these two variables – pessimistic, intermediate and optimistic. For all three scenarios, the total market for OO is a function of new and substitutional demand. New demand forms about 50 percent of the current market,¹¹ representing new opportunities for work that would not feasibly be performed without an OO marketplace. Examples include large-scale image tagging and categorization, driven by rapid growth in data. Substitutional demand forms about 50 percent of the current market for OO,¹² representing work that could also be performed by traditional impact sourcing and BPO firms, but is transferred to OO marketplaces. Examples of substitutional demand for microwork include digitizing paper records and providing audiotranscription services. Thus, the three scenarios were defined as follows:

Pessimistic scenario: it is assumed that OO is still early in the innovation process, only early adopters are willing to try out OO, which means that the growth rate of the industry is not expected to accelerate and will continue along its historical trajectory. This scenario also implies no major cannibalization of the BPO industry.

Intermediate scenario: in this scenario, a tipping point has been reached, where take up moves from early adopters to an early majority, and the growth rate of OO will accelerate. In order to estimate how much it would accelerate, comparison was made with the BPO industry to identify the tipping point and the acceleration rate and those figures used for this scenario. Again, in this scenario there is no major cannibalization of BPO industry

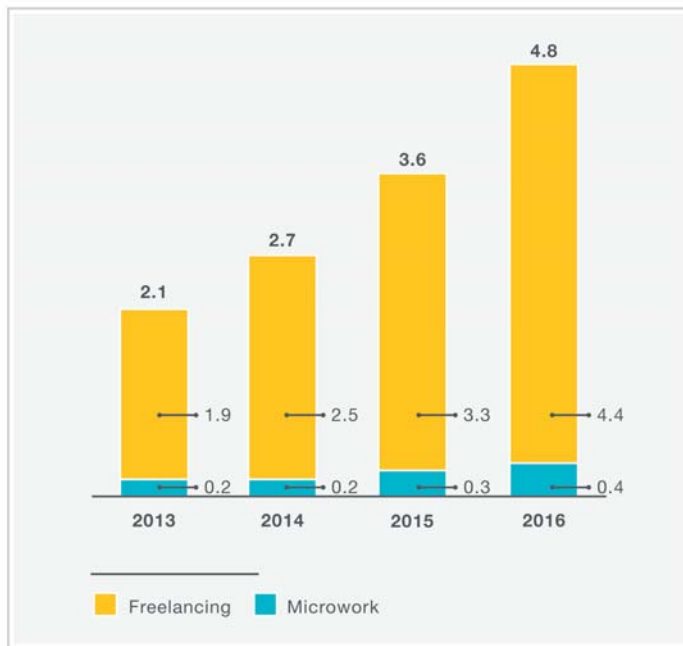
Optimistic scenario: the tipping point has also been reached in this scenario and so demand will accelerate. However, in the optimistic scenario there will be major cannibalization of the BPO industry and it is assumed that 25% of the current BPO demand will be served through OO by 2025. This results in a step change in demand and much quicker growth.

SIZE OF THE MARKET

These different approaches were taken to estimate the future market size in the short (to 2016) and medium (to 2010) term. Since the industry is changing rapidly and is highly susceptible to disruptive technological innovation, forecasting beyond 2020 would be highly speculative and confidence intervals too high to provide useful information.

Using the methodology outlined above, in 2016 the market size for online freelancing is estimated to reach \$4.4 billion, and for microworking the market is forecast to be \$0.4 billion, resulting in a total OO industry projected market of \$4.8 billion (see Figure 2.3).

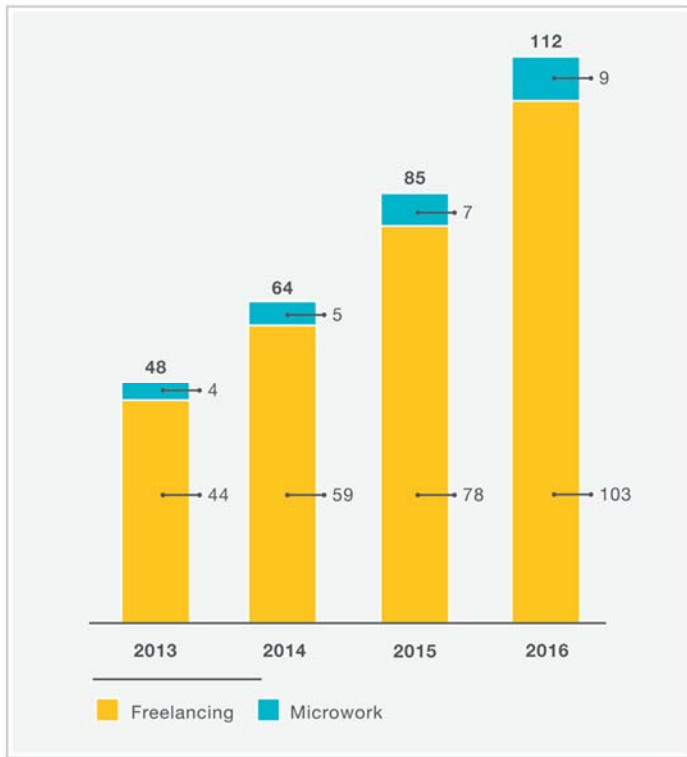
Figure 2.3 – Estimated Short-Term Growth, \$ billion



Source: Dalberg analysis, based on revenue data accessed June, 2014, from China Tech News 2011; Ipeirotis 2010a; Elance-oDesk 2014b; Freelancer Limited 2014a.

This market will support jobs (mostly part-time) for an estimated 112 million workers—9 million in microwork and 103 million in online freelancing (see Figure 2.4).¹³

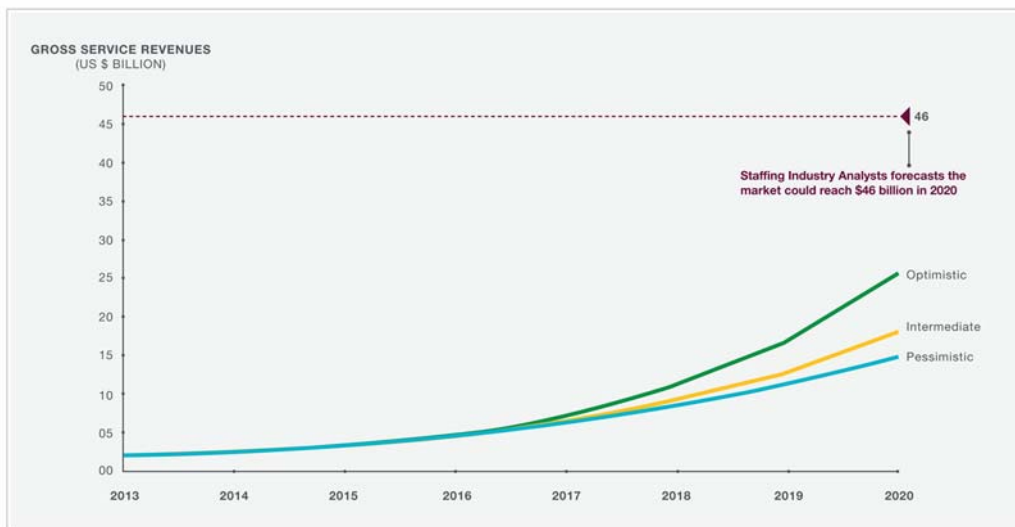
Figure 2.4 – Estimated Short-Term Growth in Number of Registered OO Workers, million



Source: Dalberg analysis, based on published workforce data accessed June, 2014, from Elance, oDesk, Freelancer, Zhubajie/Witmart, CrowdFlower, and Amazon Mechanical Turk.

The medium-term scenarios (see Figure 2.5) estimate that, in 2020, the OO industry will generate gross services revenue in the range of \$15 billion to \$25 billion.

Figure 2.5 – Estimated Growth in Online Outsourcing Revenue, 2013–2020, \$ billion



Source: Dalberg analysis, based on historical revenue data accessed June 2014 from PricewaterhouseCoopers 2005; NASSCOM 2009, 2013.

These figures are comparable with those of other industry expert estimates. Staffing Industry Analysts project that the 2020 market revenue will range from \$16 billion to \$46 billion (Staffing Industry Analysts 2014); Upwork estimate that their own annual revenue will reach \$10 billion in 2020 (Arabian Gazette 2014). Assuming their market share remains at present levels, the total OO market would hit \$25 billion in 2020.

SUPPLY-SIDE CONSTRAINTS TO GROWTH

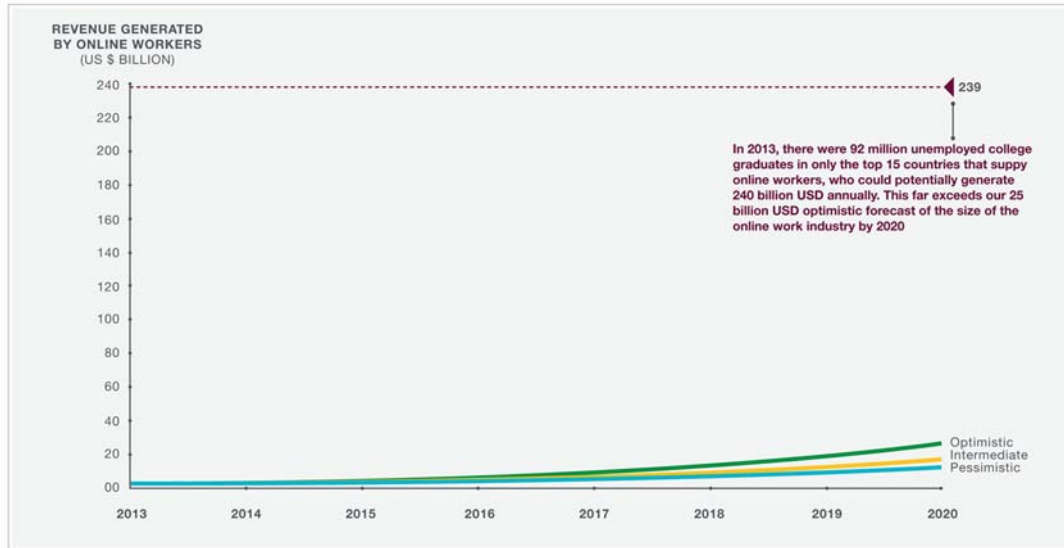
To project the future growth of the OO industry, the model considered historical growth and assumptions from industry experts, as well as how similar industries (such as BPO) have grown in the past.

Interviews suggest that the supply of workers is not a constraint to growth, and that growth is driven by client demand. This is borne out by data indicating that the supply of workers is growing almost twice as fast as demand in this sector (Crowdsourcing.org 2012). Qualitative interviews with workers found that they would like to work more than they currently do—the amount of work they have is limited by client demand for their services. In order to support these assumptions, the overall supply-side constraints to future growth were estimated using a three-step approach:

- Understand the potential number of OO workers globally.
- Develop a conservative estimate of how much of the total gross revenues of the OO industry these workers could absorb.
- Compare this potential figure with future projections of the size of the OO industry.

For the purposes of this study, to determine whether supply of OO workers could meet demand, a worst-case scenario was considered. In that case, only unemployed graduates from the 15 countries most successful in the industry were hired.¹⁴ With these assumptions, there are over 90 million potential OO workers living in these 15 countries. Surveys and interviews conclude that OO workers could earn \$5 per hour,¹⁵ each working an average of 10 hours a week. According to these assumptions, these college graduates could potentially generate \$240 billion annually (see Figure 2.6), a figure that is an order of magnitude greater than the \$25 billion optimistic forecast of the global OO market by 2020, suggesting that it is unlikely that the supply of OO workers will constrain the growth of this new industry.

Figure 2.6 – Estimated Capacity of Online Outsourcing Workers, 2013–2020, \$ billion



Source: Dalberg analysis, based on data from PricewaterhouseCoopers 2005; NASSCOM 2013; UNESCO 2014; OECD 2012; Mahapatra 2013.

Note: The top 15 nations that supply OO workers were selected based on demographic data from oDesk, Elance and CrowdFlower.

These estimates confirm the initial analysis that the overall supply of workers does not, at present, limit the growth of the OO industry. Demand for OO, however, may be increased through supply-side interventions that improve the skills of OO workers and the perceived quality of their work. These interventions are further discussed in Chapter 6.

LIMITATIONS OF THIS APPROACH

This approach and methodology for estimating the potential size of the market and its supply-side constraints has been driven by publicly available data and insight from expert interviews. Estimates are limited, however, by three main factors: the poor availability of data in the industry as a whole, the nascent nature of the OO industry, and uncertainty about how demand for OO will evolve in the coming years.

POOR DATA AVAILABILITY

Public revenue data are available from most (but not all) of the leading OO firms; these data were used when they were available. There are, however, hundreds of smaller microwork and online freelancing firms. The publicly available data on both their revenue and their market share are very limited. As a result, estimating the current size of the market proved challenging, so assumptions had to be restricted to available data from larger marketplaces and insight from industry expert interviews.

NASCENCE OF THE ONLINE OUTSOURCING INDUSTRY

Although the OO industry began in 1999, it is still new. Although it attained global revenues of \$1 billion in 2012 (Staffing Industry Analysts 2014), it is growing rapidly and only one of the leading marketplaces is publicly traded. Because of this nascent industry picture, growth trajectories are uncertain and depend heavily on the speed with which potential clients will adopt this new form of work. It is this speed of adoption that will determine the shape of the demand curve.

There is no absolute certainty that growth will continue in existing sectors, and the industry's expansion is still subject to speculation. Large clients are yet to show signs of mass adoption and current marketplaces are still working to develop operating models that can unlock bigger opportunities than those currently offered in their target markets.

LONG-TERM UNCERTAINTY

No agencies or institutions have attempted to make forecasts beyond 2020. Long-term projections are vulnerable to unexpected changes in industry structure and technology disruptions. New business models, competitive forces, and the constantly changing global economic landscape all contribute to this high level of uncertainty. Such uncertainty imposes some limitations on the reliability of industry forecasts.

CHAPTER 3. PROFILING ONLINE OUTSOURCING WORKERS

Online outsourcing (OO) is a global industry, with workers drawn from across the world. Anyone with the prerequisite skills and access to the required infrastructure (a computer and the Internet) can engage in OO work. Across the OO industry as a whole, almost two-thirds of workers currently come from the United States (which has the most workers), India, and the Philippines. In Europe, Serbia and Romania contribute high numbers of OO workers relative to their total populations. Africa still has a small representation, but South Africa and Kenya are the leading countries on the continent.

Although specific worker demographics, motivations, and engagement levels may vary depending on geographical contexts, languages, cultural norms, and practices, some commonalities across OO workers from different countries and backgrounds are evident. Workers are predominantly male and below the age of 35. They have different education levels depending on whether they engage in microwork or online freelancing: 75 percent of online freelancers have a university degree, but only 33 percent of microworkers do. On average, most workers engage in this type of work for fewer than 20 hours per week, although a larger proportion of microworkers work part time in this way. Income generation is the most common motivating factor in all cases. Most microworkers see OO as a means of earning supplementary income; by contrast almost 50 percent of online freelancers report OO to be their only means of income.

METHODOLOGY

To determine where OO workers are located, publicly available data were gathered and collated for both the online freelancing and microwork segments of the industry. Data to estimate the geographical distribution of OO workers came from three firms: Upwork (formerly Elance and oDesk), CrowdFlower, and Amazon Mechanical Turk. Upwork, the only firm for which geographic distribution data were available for online freelancing, represents 8 million workers—about 20 percent of registered online freelancers globally, but a larger percentage in terms of activity and revenues. Data on the distribution of microworkers from CrowdFlower and Amazon Mechanical Turk are estimated to represent about 80 percent of the global microwork market (CrowdFlower 2014; Ross, et al. 2010).

To establish the profiles of OO workers, qualitative data from interviews were combined with publicly available quantitative data to generate insights into a representative portion of the global OO workforce. Publicly available data were available only from CrowdFlower, Amazon Mechanical Turk, and Upwork marketplaces. Given that these firms used different survey methodologies and presented data in different (not-always comparable) formats, the trends discussed below may not be definitive for the entire OO market.

MAPPING ONLINE OUTSOURCING WORKERS

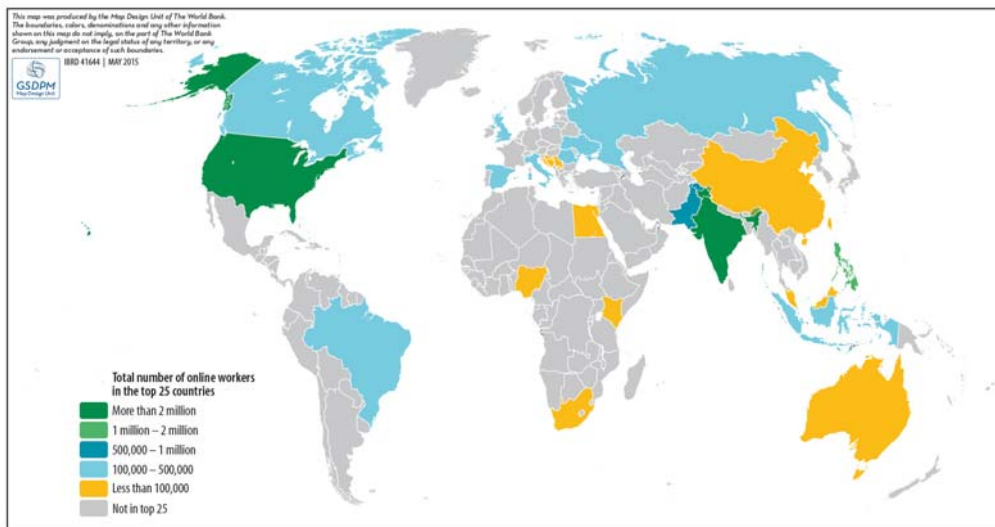
Most OO workers live in the United States and India, with 23.9 percent and 21.5 percent of global workers coming from these two countries, respectively (see Table 3.1). The drivers for this are unknown, although India’s large population skews the total number of workers. Overall, the distribution of workers across the world is similar for microwork and online freelancing. A small set of countries contributes the majority of workers, while a large number of countries provide relatively few workers. Workers come from high-, middle- and low-income countries and from all continents, although Africa and South America are underrepresented at present (see Figure 3.1). The relative underrepresentation of South America may reflect the fact that most demand is currently generated in English-speaking countries; challenges related to infrastructure and skills development may limit Africa’s involvement in this industry.

Table 3.1 – Top Five Online Outsourcing Countries

Position	Global online workforce (%)		Workers per country population (%)		Workers per country's total labor force (%)	
1	United States	23.9	Philippines	2.0	Philippines	4.8
2	India	21.5	Serbia	1.1	Serbia	2.6
3	Philippines	18.6	Romania	1.0	Romania	2.0
4	Pakistan	5.8	Canada	0.9	Canada	1.7
5	United Kingdom	4.2	United States	0.8	United States	1.6

Source: Dalberg analysis, based on data from Ross et al. 2010; CrowdFlower 2014; Elance 2014; World Bank 2014.

Figure 3.1 – Global Supply of OO workers, Top 25 Countries

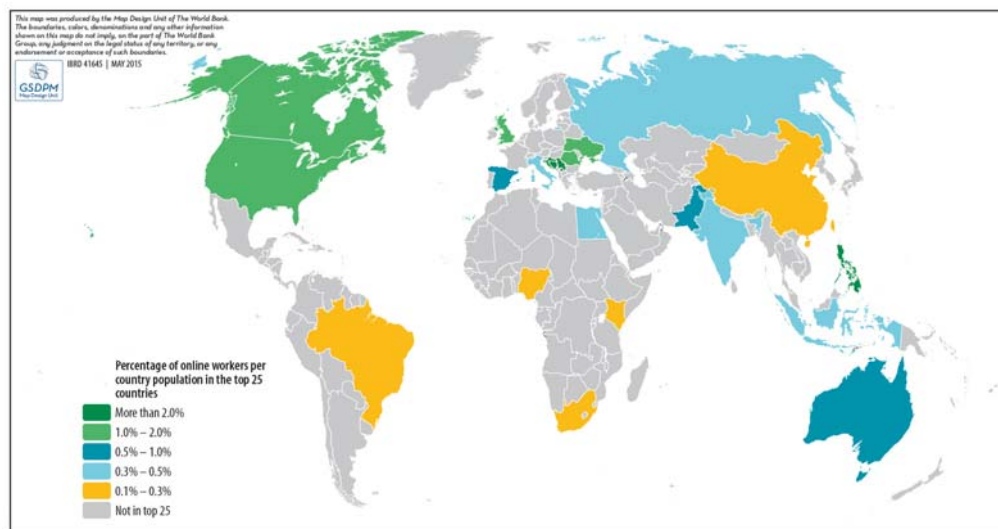


Source: Data from Ross et al. 2010; Ipeirotis and Horton 2012; Elance 2014; CrowdFlower 2014.

Note: Data are available only from Elance for the top 25 countries on the Elance marketplace. This figure estimates the total number of all OO workers for all of those top 25 countries extrapolated from the Elance data.

It is worth noting that when population size and size of the labor force are taken into account, the Philippines, Romania, and Serbia have the greatest proportion of their populations engaged in OO (see Table 3.1 and Figure 3.2). Although the Philippines has the most expensive and slowest Internet speed in Southeast Asia,¹⁶ a report on *The State of Filipino Freelance Market* issued by Elance stated that “the country is a prime destination for those hiring online freelancers because of factors such as a skilled and hardworking workforce, technologically savvy population, and accelerating entrepreneurial communities” (TeamAsia 2013). Although CrowdSource, a microwork marketplace, does not publish information about the geographical distribution of its workers, in interviews it reported that the countries contributing the greatest proportion of its workers are the United States, the Philippines, India, and the United Kingdom.

Figure 3.2 – Global Supply of OO workers per Country Population, Top 25 Countries



Source: Data from Ross et al. 2010; CrowdFlower 2014; Elance 2014; World Bank 2014.

Concrete data are not available on how the types or complexity of tasks differ between countries. Qualitatively, interviewees reported that there appears to be no difference in the types of tasks performed in developing and developed countries. Clients report, however, that they target workers from specific countries for certain tasks. For example, clients report targeting Ukrainian workers for complex software programming, because they perceive these workers to provide a higher quality output. Some clients report targeting workers from the United States for all professional tasks, because of a perception that American workers have better soft skills. CloudFactory reports that their workers in Nepal are better suited to data entry tasks and their workers in Kenya are better suited to audio transcription tasks. This is likely to be a function of familiarity with conversational English.

It must be noted that these figures reflect the distribution of OO workers only on global marketplaces. An estimated 12 million mainly Chinese workers are registered with Zhubajie/Witmart, which has a limited impact on the outside world. At a smaller scale, there are an estimated 50,000 Indian workers registered on WorkNHire, an India-specific marketplace now beginning to target global clients.

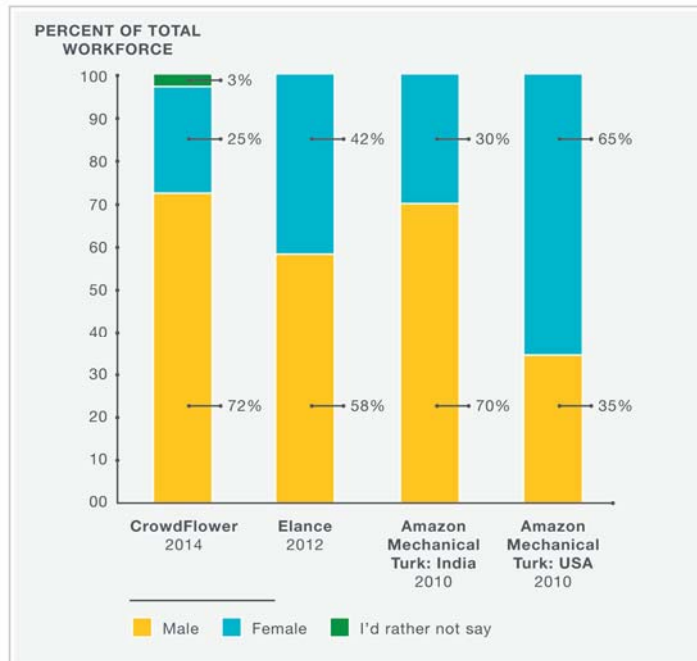
PROFILING WORKERS

In order to profile workers who take up OO, this section considers gender, age, and education distribution.

GENDER DISTRIBUTION

The majority of OO workers are male (see Figure 3.3). In both microwork and online freelancing marketplaces, there appear to be more male OO workers than female OO workers, with one major exception: Amazon Mechanical Turk in the United States, which employs more women.

Figure 3.3 – Gender Distribution in Selected Marketplaces



Source: Data from Ipeirotis 2010b; Elance 2012b; CrowdFlower 2014.

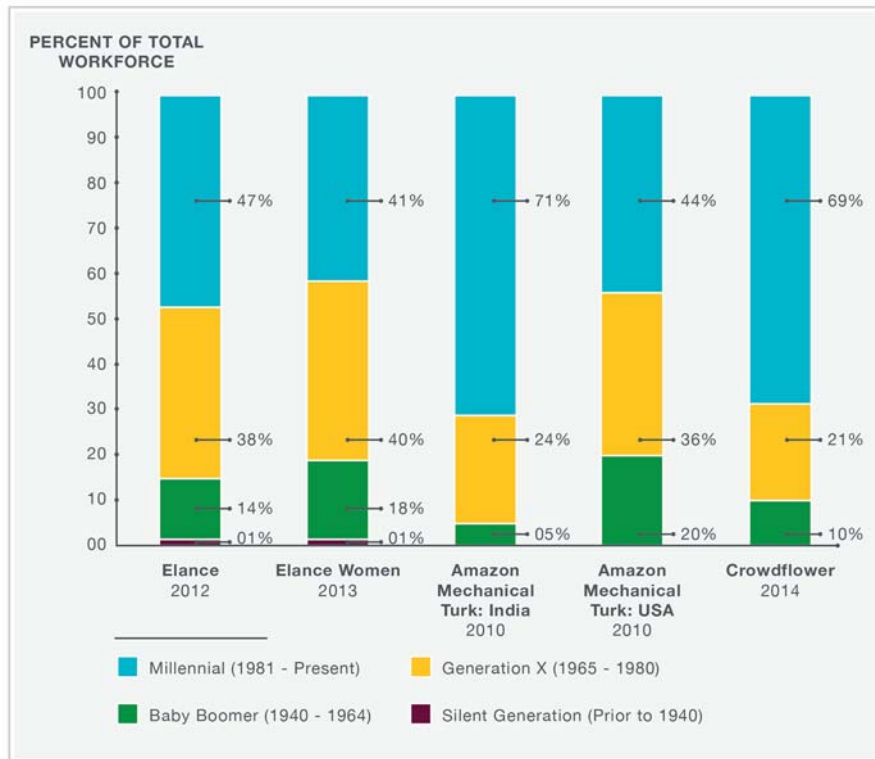
Note: CrowdFlower and Elance data present worker profiles from the global workforce, whereas AMT data focus on worker profiles from India and the United States, which represented the majority (80.8%) of their workforce at the time.

According to Ipeirotis (2010b), there appears to be a correlation between gender and whether workers consider OO to be a primary or secondary source of income. In India, where OO is considered to be a source of primary income, the majority of workers are male. In countries where OO is considered a secondary source of income, the majority of OO workers are female. This may reflect cultural attitudes and preconceptions about the societal role of women.

AGE DISTRIBUTION

Most OO workers are “millennials” (individuals born between 1981 and 2000) (see Figure 3.4). Millennials are expected to make up 75 percent of the global workforce by 2025 (Deloitte 2014).

Figure 3.4 – Age Distribution in Selected Marketplaces



Source: Based on data from Elance 2012b; CrowdFlower 2014; Ipeirotis 2010b; Elance 2013a).

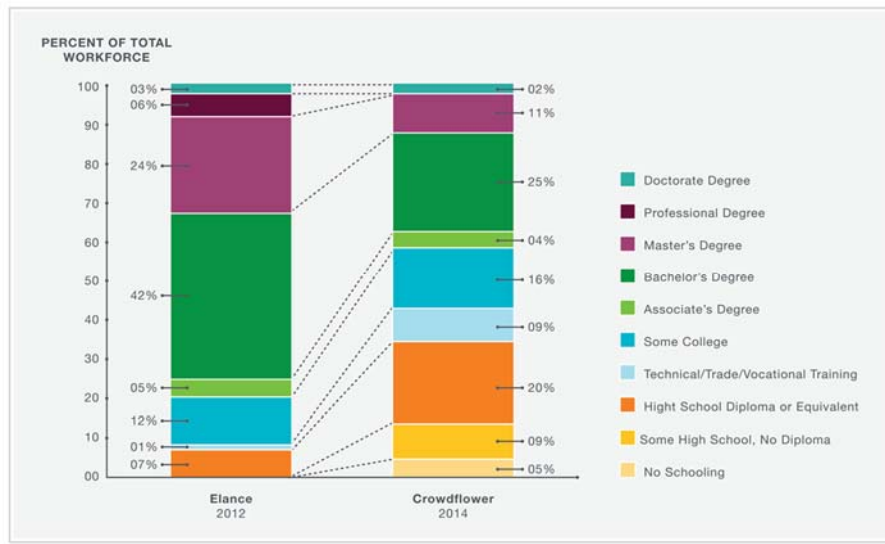
Note: CrowdFlower and Elance data presents worker profiles from the global workforce, whereas AMT data focuses on worker profiles from India and the United States, which represented the majority (80.8%) of their workforce at the time.

Interviews with OO workers reveal that a large number of university students engage in OO to earn additional money while studying. In developing world contexts (for example, India), university computer labs provide students with access to computers and IT infrastructure, enabling them to work online. Elance’s 2013 *Predictions* anticipated that one in four university students would work online in 2013 (Elance 2013b), while oDesk’s 2013 survey revealed that 21 percent of their workers were still in college (oDesk 2013a).

EDUCATION DISTRIBUTION

Microworkers and online freelancers have significant differences in their education levels (see Figure 3.5). Only 38 percent of microworkers are reported to have earned a bachelor’s degree or higher, whereas 75 percent of online freelancers have. This disparity can be attributed to the difference in the nature of the work and complexity of tasks performed on these different marketplaces, as discussed above.

Figure 3.5 – Education of Workforce in Selected Marketplaces



Source: Dalberg, based on data from CrowdFlower 2014; Elance 2012b.

In general, the current profile of workers on most marketplaces does not fit a typical definition of disadvantaged youth. For example, 80 percent of Indian workers on Amazon Mechanical Turk have completed a bachelor’s degree or higher (Ipeirotis 2010b).¹⁷ Fewer than three percent of Indian workers on Amazon Mechanical Turk fall into a low-income demographic (earning less than \$1,700 per year) (Khanna, et al. 2010). The exception to this rule is that certain managed service marketplaces (for example, Samasource) specifically target disadvantaged young people as a way of maximizing their impact.

MOTIVATIONS AND LEVEL OF ENGAGEMENT

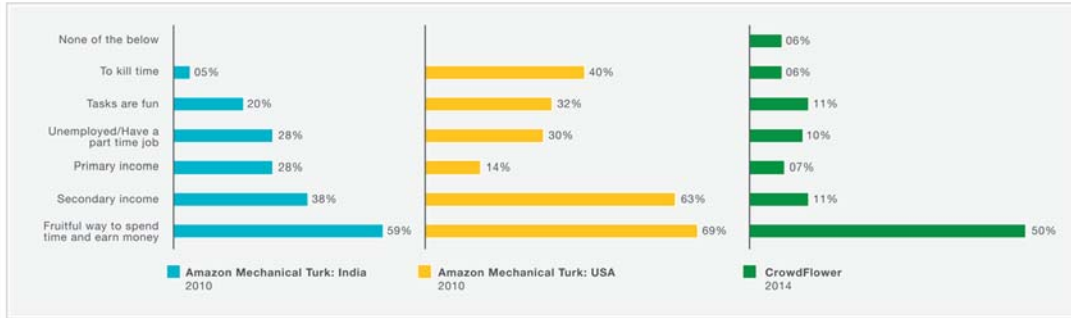
Although OO workers report different motivations—such as improving autonomy, gaining flexibility, and engaging in work that they are passionate about—income generation is the most common motivating factor. A variety of secondary motivations also come into play for some workers. These range from entrepreneurs who need a flexible source of income while starting their own businesses to workers who participate in OO because they are unable to find or perform traditional work (for example, workers suffering from social phobia).

PRIMARY MOTIVATION: INCOME GENERATION

The majority of microworkers do not see microwork as their primary source of income; in contrast, however, 48 percent of surveyed Elance workers report OO to be their sole source of income.

Figure 3.6 illustrates the motivating factors for workers on Amazon Mechanical Turk in the United States and India (Ipeirotis 2010b), and globally on CrowdFlower (CrowdFlower 2014). The majority of workers (50–69 percent) perceive it to be a “fruitful way to spend time and earn some money.” A significant number of U.S. microworkers (63 percent) also indicated that they completed tasks on Amazon Mechanical Turk as a source of secondary income.

Figure 3.6 – Motivation for Participating in Selected Microwork Platforms, percent of total responses



Source: CrowdFlower 2014; Ipeirotis 2010b.

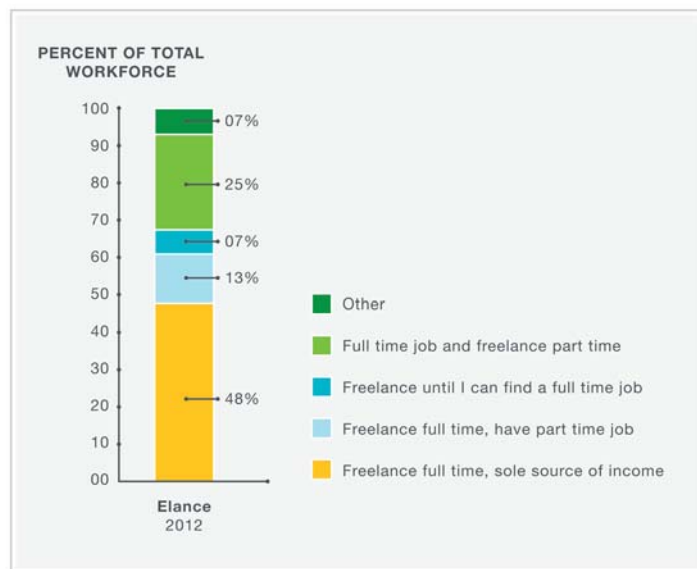
Note: Respondents on the AMT survey had the option of picking more than one motivator; respondents on the CrowdFlower survey were restricted to a single response.

Qualitative interviews with OO workers from Kenya, Nigeria, the Philippines, Ukraine, and the United States provided insight into the reasons why many workers do not see microwork as a primary source of income:¹⁸

- Workers cite a seasonality effect—the number of jobs posted on microwork sites reduces significantly during the holiday periods (Christmas or summer holidays), when income is most needed. Some interviewees indicated that they value a predictable income more than a potentially better paying opportunity that is less predictable.
- Income from microwork may not be sufficient to meet primary needs, partly because of the hours of work available.

The situation is different for online freelancers. Almost half of workers on Elance reported online freelancing as their sole source of income (see Figure 3.7). This finding was confirmed by other platforms in interviews: WorkNHire does not collect formal data, but its founder estimates that about 60 percent of its workers consider online freelancing their primary source of income.¹⁹

Figure 3.7 – Motivation for Participating in Online Freelancing on Elance



Source: Elance 2012b.

Information gathered through stakeholder interviews shows that workers often see part-time freelancing as part of an exit strategy from full-time employment into self-employment or entrepreneurship, as they acquire both soft and hard skills that they can use to set up their own businesses.²⁰ Workers report that OO affords them the flexibility and time needed to establish new ventures.

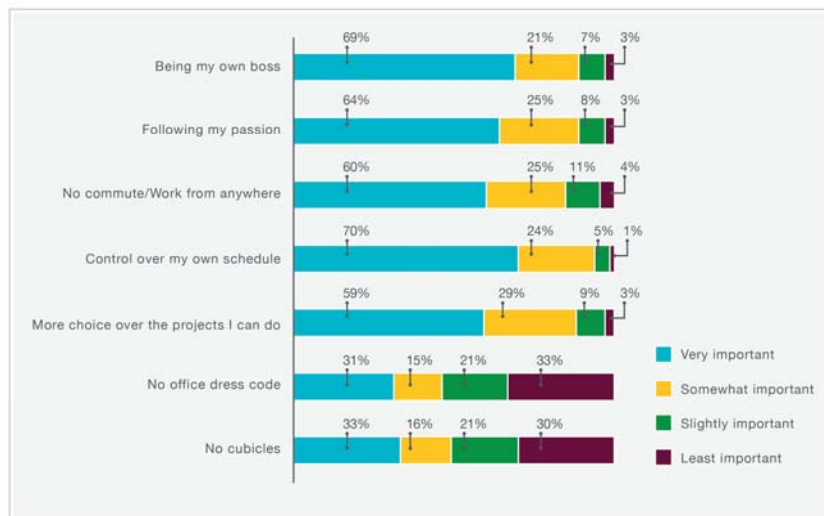
SECONDARY MOTIVATIONS

Workers report a wide range of secondary motivations for participating in OO. They may:

- Be unable to find traditional work:
 - Of the Amazon Mechanical Turkers from the United States, 24 percent reported that they were unemployed and would prefer to find traditional work (Shapiro, Chandler and Mueller 2013).
 - In the United States, convicted felons have been reported to engage in OO after having served their prison sentences. Ex-offenders are less likely to find gainful employment than average American citizens; lack of employment is a significant risk factor for recidivism (James 2014).
 - In Africa, online freelancers report that they turn to OO after spending a long time unemployed and searching for professional, traditional work.
- Be unable to perform traditional work for health reasons:
 - About 50 percent of American workers on Amazon Mechanical Turk meet clinical criteria for social anxiety (over seven times higher than the prevalence of social anxiety disorders in the general population) (Shapiro, Chandler and Mueller 2013). Leaders of microworker online communities report a number of cases of workers who use Amazon Mechanical Turk because of physical or mental health issues that limit their ability to perform traditional work.

- Be unable to perform traditional work for cultural reasons:
 - Qualitative research from India suggests that there is a cohort of Indian women who use OO as a way to earn money while fulfilling traditional social obligations, including caring for children and elderly family members.²¹
 - Taskty (an Egyptian online freelancing company) reported that some of their workers are Egyptian women from traditional households, who use online freelancing as a way of earning money without needing to enter male-dominated workplaces.
- Require autonomy and flexibility:
 - Of online freelancers on Elance, 70 percent reported that the ability to have “control over my own schedule” is very important to them (see Figure 3.8).
 - In a new report, 70 percent of workers on Upwork report that they value being able to choose the projects that they work on, and 70% report that they value being able to balance their work and personal lives (Elance-oDesk 2014a).
 - Qualitative interviews revealed instances in India, Kenya, and Nigeria where some OO workers use OO to earn money while studying or while trying to set up their own businesses.
 - In focus groups, a number of female OO workers reported that online freelancing allowed them to earn money (and gain independence) while taking care of their children and families.

Figure 3.8 – Most Important Self-Reported Motivation, Percent of Total Responses



Source: Elance 2012b.

- Be reluctant to migrate away from family to find work:
 - Some workers (particularly in South Asia and Southeast Asia) reported that they choose to work online full time as a way to earn more income than they could in traditional work and avoid economic migration—both rural-to-urban migration and emigration to developed countries.

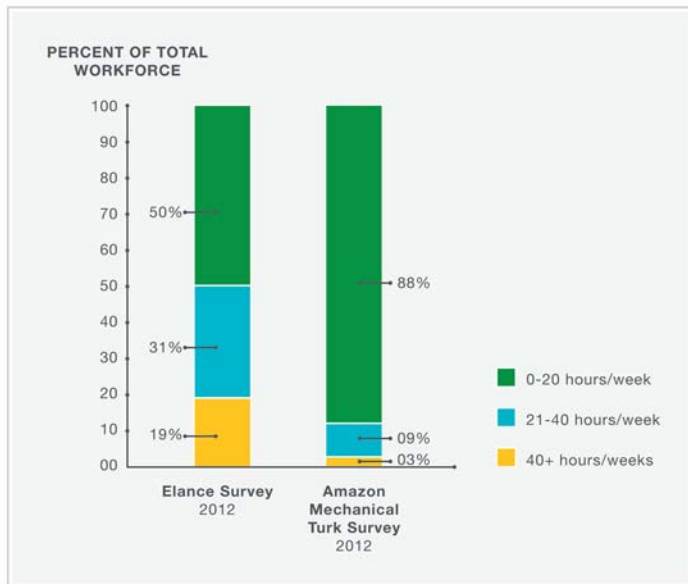
- Have a passion for the work:
 - In Kenya, OO workers reported in interviews that they work on iWriter to fulfill their passion for writing; in these cases, earning money seems to be a secondary motivation.
 - In Egypt, there are reports of OO workers who are passionate about acquiring technical skills (for example, software development), and they freelance as a way of gaining extra skills in their hobby area while maintaining the stability and regular income of their traditional work in office administration or retail.

ENGAGEMENT LEVELS

The amount of time that OO workers spend engaging in tasks varies significantly across the different types of marketplace. The reasons for this are unknown, but the time spent could be influenced by the availability of work, personal motivation, and the compensation level per job.

Figure 3.9 compares the time workers spend on online freelancing and microwork marketplaces.

Figure 3.9 – Number of Hours Spent on Online Outsourcing Per Week on Selected Marketplaces



Source: Data based on surveys conducted by Elance 2012a; and Amazon Mechanical Turk Ipeiritis 2010b.

In the case of both online freelancers and microworkers, the majority of people work up to 20 hours per week, although there are more part-time workers on Amazon Mechanical Turk than on Upwork. This can be attributed to the fact that microwork is considered a source of secondary income, hence the workers are likely to spend more hours focusing on their primary source of income.

In contrast, online freelancers tend to spend more time on open services platforms, probably because this is their primary source of income and they are therefore engaged in the work on a full-time basis. Of the workers surveyed by Elance, 66 percent indicated that they worked on two or more projects at a time (Elance 2012b).

ONLINE OUTSOURCING WORKER ARCHETYPES

Focus groups and one-on-one interviews with OO workers in Kenya and Nigeria have led to a number of worker archetypes, detailed in the section below, although the sample size is small. There is no single typical profile of an OO worker in Kenya: OO workers range from university-educated, middle-class workers who choose to work online because salaries are higher than in traditional work, to unemployed students who work online because they cannot get traditional work, and single mothers who work online because they can support their family while fulfilling their responsibility as care givers. This section profiles various OO workers to help understand the breadth of experiences and the challenges that workers face.²²

THE BREADWINNER (KENYA)



Elizabeth, 55, originally worked as a stenographer. Her husband died in 2003, and she is the sole breadwinner for three of her own children and one other orphan who she has informally adopted. She works online on writing marketplaces, and is currently being onboarded to start work with CloudFactory. At the moment, she earns around \$50–80 per week working online. This is her sole source of income from which she pays for her family’s rent and living expenses, and to service her short-term Savings and Credit Co-Operative (SACCO) loans.²³ “I lost my husband in 2003, so I am the mother and the father. ... I am self-sufficient... Online outsourcing does not confine me to an 8-5 time frame. I can work at my convenience, and I can manage my own home while I work.”

THE SELF-SUPPORTING STUDENT (KENYA)



Chrisphine, 35, started a university degree in 2013, and was dependent on loans from family and friends to pay his tuition fees. Struggling to make ends meet, he borrowed money from a loan shark who charged 100 percent interest. He initially tried to earn money through pay-per-click scams, but was unable to raise tuition fees and had to leave his studies. He stumbled across Walter Akolo’s freelancerkenya community and has been working online full time for the past seven months. He is now earning \$40–100 per week, and hopes to resume his university studies in the autumn.

THE PART-TIME WORKER PURSUING THEIR PASSION (KENYA)



Laban, 26, has been a part-time OO worker for the past year and a half. He works full time in a bank, but is passionate about writing and works online as a way to earn extra money and “as a way of turning my passion into a profession.” Laban values the flexibility of OO as “you can wake up at 2am, do work, and then have the rest of the day free.” Laban earns \$100 per week on average, but can earn nothing in a bad week. He spends the money on rent and supporting his family members; he saves and invests any money that is left over.

THE JOB-CREATING ENTREPRENEUR (KENYA)



Joan, 24, has been working online for three years; she started as a university student. “I started when I was in university... I had to move out [from my parents’ house] and figure out a way of taking care of myself. I ended up paying my fees for university, stayed at my own place, bought my own things.” After three years of experience, she now primarily writes on Asiawriters. She has six accounts, which she manages, and employs five people who come to her home office every day to work online. She provides computers and an Internet connection, and is responsible for procuring work; they write articles for her. In a good week, Joan earns \$200 after paying her employees—the total income from everyone is \$1,000.

THE COMMUNITY LEADER (NIGERIA)



Femi, 40, has been working on oDesk and Elance since 2011. He is university educated and, before starting online freelancing, he was a systems analyst developing interactive e-learning software. At first, Femi struggled to get any contracts, and it took him over a year to start earning money from OO. Femi now works online full time, earning up to \$750 per week. Femi is so enthusiastic about OO that he now sees himself as a mentor for new Nigerian OO workers. Both informally and as an Elance mobilizer, Femi gives presentations and runs informal “office hours” to introduce people to OO work, helps budding OO workers navigate through OO marketplaces and payment mechanisms, and helps people win contracts and create wealth for themselves. “[Online outsourcing] gives me the freedom to choose who I work with, when I

work, and how I work. I love that I can work without borders, on interesting jobs, and with clients spanning several countries and organizations.”

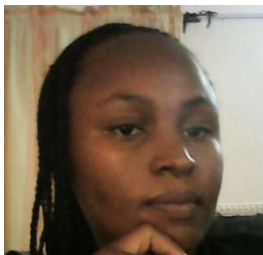
THE SELF-MADE ENTREPRENEUR (NIGERIA)



Ayodeji, 29, started working online four or five years ago because of “the serious lack of employment opportunities in Nigeria.” He was university educated in microbiology but always more interested in technology, and taught himself website design using online resources. Ayodeji joined Freelancer in 2009 and Elance in 2011, but found that he really struggled to get work on these marketplaces, reporting that global clients do not trust him because he is Nigerian, and there is a global perception that all Nigerians are scammers:

“The main issue with getting contracts awarded to you is the reputation that Nigeria already has.” Unable to get work on Freelancer or Elance, Ayodeji started to procure OO work for himself directly with clients. He identified potential clients on LinkedIn, Skillpages.com, and through his own network of contacts. Through this, Ayodeji has built up his own successful freelancing business focused on web design, search engine optimization, and online marketing. He has managed to win contracts with major multinational corporations such as Samsung and HP. He now contracts some of his work to Elance and oDesk workers.

THE ASPIRING WORKER WHO CANNOT WIN A CONTRACT (NIGERIA)



Nnenna, 28, is a stay-at-home mother with two children. Nnenna graduated in linguistics and is an aspiring online writer. She stumbled across Freelancer while browsing the Internet three years ago. Despite creating a full profile and spending 2–3 hours per day bidding for writing contracts, she has not won any contracts for work, because “people don’t like Nigeria. Everyone thinks that you are scamming them.” Nnenna has tried registering for other marketplaces, including fiverr.com, but has not been able to get any paid work through them. Nnenna knows workers that change their name and profile pictures to pretend that they are not from Nigeria, but she is not willing to do that. At the moment, Nnenna writes for her own blog and is trying to get paid to write articles for local Nigerian websites.

CHAPTER 4. SOCIAL AND ECONOMIC IMPACT ON WORKERS

Given the potential for online outsourcing (OO) to provide large-scale employment for people in the developing world, there is a need to better understand the potential socioeconomic impacts (both positive and negative) of OO. Clearly an economic benefit is derived by providing job opportunities to previously unemployed and underemployed people. This includes second-order economic benefits, such as remittance money sent from OO workers to support their rural relatives. There are also significant potential social impacts, both positive and negative—positive in terms of skills development and career advancement, and negative in terms of the psychological stress of microwork.

METHODOLOGY

To determine its socioeconomic impact, structured interviews were used to gather data and insights from a range of actors in the OO space—OO firms, clients, and workers themselves. In general, available quantitative data documenting the impact of OO are limited. However, the ethnography of workers on microwork marketplaces such as Amazon Mechanical Turk has been studied both in India and the United States, and insights have been drawn from the available scientific literature. Research into the impact of online freelancing is at an earlier stage. Although a number of research projects have recently been launched, they have not yet published concrete data. Wherever possible, initial insights from these research projects have been drawn through interviews with academics, OO workers, and OO firms.

ECONOMIC IMPACT

This section explores the primary economic impact of OO at an individual level. Although second-order impact is an area that should be considered, there is an absence of available data. Samasource estimates that each of its workers supports 3.6 dependents (Samasource 2013a). The global economic impact of this method of employment is detailed in Chapter 2.

Table 4.1 summarizes estimated average monthly wages across selected OO marketplaces. Monthly earnings are driven by hourly wages and by the hours worked; given that there are significant differences across marketplaces, there is limited use in direct comparison of monthly wages across different platforms. For example, one Filipino online freelancer working part time reported that she earned \$3–4 per hour on oDesk for performing tasks such as transcription, data entry, and basic administrative services. An experienced Nigerian online freelancer reported that he earned around \$20 per hour for software development and website design on Upwork (formerly Elance and oDesk). At the high end of the range, online freelancers on oDesk who provide consulting on patents or venture capital consulting earn around \$40 per hour (Horton 2012). In general, however, full-time OO workers in India, Kenya, and Nigeria—the countries for which this report has access to actual data—earn monthly salaries that are comparable to, or higher than, their peers in traditional work. This is supported by survey data; 28% of freelancers on Upwork reported that they earn “more” or “much more” than other people in their community (Elance-oDesk 2014a)

Table 4.1 – Self-Reported Monthly Wages in Selected Marketplaces

Position	Estimated typical monthly earnings (US \$)	Estimated typical hours worked per week
Online outsourcing		
Microworker in CloudFactory (in Kenya) ^a	40-172	10-12
Microworker in Amazon Mechanical Turk ^b	80	10-20
Microworker in Samasource (in Kenya)	100-300	30-40
Online freelancer (includes freelancer.com and oDesk) ^c	200-750	20-40
Freelancers in WorkNHire (in India alone)	800-1,000	40-50
Traditional labor market		
Kenya starting civil service salaries	100	40
Nigeria average graduate starting salary	120-300	40
India average engineering graduate salary	350-480	40

Source: Dalberg’s qualitative stakeholder interviews with data from i-Graduate and Education UK 2009; Ipeirotis 2010b; Gino and Staats 2012; Office of the Prime Minister, Kenya 2012; Mehra and Roy 2014.

Note: These earnings are self-reported by a small sample of OO workers who were interviewed for this study. The figures may not be representative of what OO marketplaces suggest workers can earn.

- a. Cloud Factory deliberately limits the hours that each microworker can work per week, to enable the marketplace to be a supplementary source of income for as many people as possible.
- b. Most workers on Amazon Mechanical Turk seem to work 10-20 hours per week, earning about \$80 per month. A small set of workers use Amazon Mechanical Turk full time; they apparently earn about \$1,000 per month (Ipeirotis 2010b).
- c. The hours worked by online freelancers vary greatly, depending on work available. Most “full-time” workers report that they can work for 20-40 hours per week, and earn \$200-750 per month. There is a small subset of highly skilled workers who can earn up to \$3,000 per month.

Although research has explored how workers spend this income, few data are available. On Upwork, 63% of workers reported that they provide at least half of their family’s total income (Elance-oDesk 2014a). Samasource reported that their workers spend more money on shelter, nutrition and food security, education, discretionary items, and local remittances than they did before starting work with Samasource. In particular, Samasource workers increased their average monthly spending on shelter (including clean water and electricity) from \$21 to \$48 per month, on nutrition from \$20 to \$40 per month, and on local remittances from \$5 to \$13 per month (Samasource 2013a). These local remittances lead to additional social benefits—for example, OO workers are reported to use their additional income to help support their relatives’ education.

Interviews and focus groups with Kenyan and Nigerian OO workers confirm that the income generated through other OO marketplaces is also often spent on shelter, nutrition, education, and supporting other family members, in addition to covering work expenses (that is, computer and Internet access). This study found cases in which OO had allowed individuals to fund property purchases or return to school to continue with their studies.

NONFINANCIAL IMPACT

This study identified four primary areas of nonfinancial impact for OO: (1) the skills that OO workers develop (both technical skills and soft skills), (2) the career prospects of OO workers, (3) the social networks that workers build, and (4) the employment benefits that OO workers can receive (for example, health insurance and retirement benefits).

TECHNICAL AND SOFT SKILLS

Interviews suggest that OO workers develop both technical and soft skills both through formal training programs and through on-the-job learning. Sixty-three percent of workers on Upwork reported that they value the opportunity to learn new skills through online freelancing (Elance-oDesk 2014a).

Technical skills: The technical skills that are developed vary significantly between workers who perform microwork and those who work in online freelancing. Microworkers develop basic technical skills, including basic IT literacy, for example, the ability to type accurately, and basic Internet literacy, for example, the ability to use Google and other search engines efficiently. By contrast, online freelancers reported that they can develop a broad range of technical and professional skills, such as proficiency in new programming languages, or the ability to use a desktop publishing program.

Online freelancers must possess at least a baseline of valuable technical skills to begin, but they reported that taking on new jobs allows them to refine and improve these technical skills. Upwork offers a service called Elance University, an optional resource (with some free and some paid-for courses) where workers can watch technical videos to pick up new skills (for example, 3D animation, use of the engineering software SolidWorks, and direct marketing techniques).

The potential to develop technical skills in online freelancing is greater than in microwork, but for many disadvantaged young people who lack technical or professional skills to begin with, the barrier to entry is high. The nature of online freelancing work is more diverse than microwork and tends to require a more complex set of skills. This diversity and complexity, combined with the fact that online freelancers are more skilled than microworkers to begin with, makes it easier for them to build more advanced skills through self-learning.

Soft skills: OO offers opportunities for workers to develop basic soft skills, although the actual benefit accrued depends on the profile of the worker. Microwork and online freelancing also overlap substantially in terms of soft-skills development. Generally all types of OO can help workers develop basic professional skills. Among these are professional and responsive communication skills (which clients report as the skills they value most in OO workers), time-management, working to a deadline, and working under a manager. There are also additional soft skills that, because of the nature of the work, online freelancers can develop. These include negotiating with clients and managing subcontracted workers.

Some managed services platforms put specific training programs in place to help develop these soft skills. For example, CloudFactory runs mandatory weekly team meetings where OO workers meet with each other, and are given the opportunity to discuss management skills and long-term career aspirations. In this context the nonfinancial impact of managed services marketplaces that target disadvantaged populations (such as Samasource and CloudFactory) is substantial. These marketplaces are able to provide formal employment to people who have previously worked only in the informal sector, and their workers can develop soft skills that prepare them for traditional employment.

CAREER PROSPECTS

Because microwork is relatively unskilled, workers do usually upskill and gain substantially higher wages. Typical wages on Amazon Mechanical Turk are \$2-3 per hour; experienced workers report that they can earn \$6-8 per hour as they learn to work more efficiently.

A large proportion of microworkers from managed services marketplaces leave OO to pursue traditional jobs or further studies. Career pathways within such managed services marketplaces vary, and data on the proportion of workers who climb career ladders are limited: Samasource (2013a) reported that 32 percent of their workers go on to full-time education when they leave Samasource, 24 percent combine work and education, and 33 percent go on to full-time work. Managed services marketplaces that focus on social impact (such as CloudFactory, MobileWorks, and Samasource) provide a limited number of opportunities for OO workers to advance within OO to become full-time employees of the marketplace, responsible for quality assurance and worker management.

Within online freelancing, surveys suggest that some workers see online freelancing as an attractive long-term proposition. In 2013, 70 percent of millennial workers (aged 14-34) reported that online freelancing was a more interesting proposition than regular work (oDesk 2013a). In interviews, online freelancers reported a range of long-term career prospects. Some said that they intended to freelance long term, some said that they were online freelancing while seeking traditional employment, and some said that they were online freelancing to gain skills and earn money while trying to set up their own businesses.

SOCIAL NETWORKS

An often-ignored impact of OO appears to be the sense of community that arises among workers. A social benefit arises from working, and forming social networks, with colleagues. Managed services marketplaces create a physical space for colleagues to meet, while open services platforms do not offer the same spaces. In discussions with academics and workers, long-term workers on Amazon Mechanical Turk find ways to recreate these communities with their colleagues. U.S.-based workers seem to become part of strong online communities (using forums and Facebook, for example). In India, academics reported several cases where microworkers form physical communities centered on universities or Internet cafés. Within these communities, workers help their colleagues use the Amazon Mechanical Turk system as it could be nonintuitive to some, find high-paying tasks, and identify unreliable clients. These communities have often developed a range of tools (including web scripts) that help workers better navigate the system in order to maximize their earnings. In Kenya, online freelancers have formed an informal community on Facebook, allowing them to share tips and tricks, including information about which OO marketplaces pay the most and which payment services work in Kenya. This would seem to suggest that, although a social benefit exists in the form of the communities that arise around managed services marketplaces, long-term workers on open services platforms are able to independently find and become part of similar communities.

EMPLOYMENT BENEFITS

Depending on country norms and regulations, traditional work may provide a range of nonmonetary benefits. These can include retirement benefits, group health insurance, administrative support, and child-care benefits. Some OO marketplaces are beginning to offer these benefits for their workers, but so far these examples are rare and appear to be restricted to workers in Canada and the United States. oDesk offers a service called oDesk Payroll, whereby people who work at least 30 hours per week on average can register to be classified as W-2 employees of oDesk's staffing agency.²⁴ Workers able to

register for this service receive administrative support to invoice contractors and pay taxes. In addition, workers are eligible for 401(k) savings plans and group health insurance plans through oDesk, which usually provide higher benefits and fewer restrictions than individual plans.

POTENTIAL RISKS

Online outsourcing often does not fit into traditional legal or societal norms. Because this way of working is novel, extensive attention has been paid to its potential negative impact.

Working conditions: Online outsourcing marketplaces have faced criticism, in the literature and in discussion, on legal and ethical grounds because workers do not receive the benefits of unionization, collective bargaining, legal protections such as minimum wage laws, or the job security that often comes with traditional work (Fort, Adda and Bretonnel Cohen 2011). In interviews, some industry experts believe that these concerns are exaggerated because the same protections are not afforded to contractors working as independent freelancers in traditional work. Surveys of workers on microwork and freelancing marketplaces support this point of view. A 2009 survey of Amazon Mechanical Turk found that workers perceived online employers to be as honest and fair as employers in traditional work (workers estimated that 69 percent of Amazon Mechanical Turk requesters treated workers fairly and honestly, compared with 64 percent of traditional employers) (Horton 2011). Ethnographic research of Turkers suggests that they do not want government regulation of the OO marketplace, partly because they are afraid that interference will lead to the marketplace being closed (Martin, et al. 2014). This is also true of freelancing marketplaces: surveys of Elance show that over 90 percent of online freelancers report that they are as happy, or happier, in freelancing, than they were as traditional employees (Elance 2012b).

Volatility: Jobs in OO market are volatile because they are done on a freelance basis, are typically of limited size and duration, and are piecemeal or discrete in nature. It is difficult for an OO worker to predict the flow, volume, or timing of work that they may receive, and the associated income from such work. Volatility affects new OO workers more than experienced ones because they do not have the reputation, experience, and regular clients to attract a steady flow of work. Newer OO workers may find it challenging to manage their expectations, and the impact of OO work on their time and income. Most developing countries treat OO as part-time work, and this may mitigate the impact of volatility.

Nature of the work: Other criticisms of microwork have included social concerns about its nature. Work is closely associated with a psychological sense of self. Few data are found on this point but in interviews, workers indicated that microwork can be isolating; performing repetitive and cognitively unchallenging tasks can lead people to question their sense of self-worth; some OO workers even report cases of depression following long periods of microwork. This criticism appears to be less relevant on managed services marketplaces than open services marketplaces because they make a greater effort to ensure that workers feel part of a community, take pride in their work, and feel that they are developing both technical and soft skills. For example, CloudFactory deliberately places OO workers in teams, holds weekly team meetings facilitated by a full-time CloudFactory employee, and teams are expected to take part in community service.

Race to the bottom: A final criticism of OO is that it may lead to a “race to the bottom.” In the context of OO, this would involve governments deregulating the labor market in an attempt to attract employment opportunities. Such deregulation could lead to lower wages and poorer working conditions for workers. However, this risk is not exclusive to OO—it always exists when governments are trying to promote a

new industry and attract investment. This potential negative impact could be mitigated by careful, deliberate actions to engage OO workers before developing new employment policies. A race to the bottom could also be mitigated by ensuring that governments attract OO by raising the quality of their workers and the reliability of their infrastructure, rather than merely by offering cheap labor.

IMPLICATIONS FOR DEVELOPING COUNTRIES

Youth unemployment remains a major development issue for many countries in regions such as the Middle East, North Africa, Sub-Saharan Africa, and Southeast Asia. Of the 1.2 billion young people in the world aged between 15 and 24, 87 percent live in developing countries. Two-thirds of them are either unemployed or trapped in low-quality jobs (UN DESA 2012; ILO 2013). The gap between new labor force entrants and new formal jobs created is enormous in these countries. In Kenya, for example, 550,000 young people entered the job market between 2009 and 2013, but only 70,000 new formal jobs were created during the same period, absorbing just 12 percent of the entrants (IEA and FES 2010; UNDP 2013). High population growth rates will only exacerbate the problem, increasing the number of youths attempting to enter the labor market (ILO 2010).

Online outsourcing is an emerging industry that could potentially contribute to addressing the youth unemployment challenge. This study confirms that developing countries could benefit from this sector by tapping into a new source of income for some of their population segments. However, the contribution of OO to strengthening employment markets in developing countries will be limited; broad national employment strategies, which could include OO but look beyond this sector, are required to fully address this challenge.

The economic impact of OO varies significantly across marketplaces, type of work, and level of engagement. Initial findings, however, suggest that it can have a significant effect at the household level for some individuals. The Philippines is among the countries benefiting the most from this opportunity; almost 5 percent of the country's total labor force is registered as OO workers. In the Philippines, where the average annual family income is \$5,230, OO can increase a family's income by almost 50 percent if an additional \$50 is earned weekly through this channel—a figure that is consistent with findings from interviews and focus groups with OO workers conducted as part of this study.²⁵

Currently, 20% of the registered workers on Upwork are from the United States (Elance 2014), (Ipeirotis and Horton 2012). The client interviews conducted as part of this study suggest that employers hire U.S. workers because of the perception that they can deliver high quality quickly, but that most employers would be willing to hire workers from other countries if they can perform at a similar level. There is, therefore, potential for developing country workers to compete with U.S. workers and increase their market share.

In addition, this study outlines other nonfinancial benefits that OO can bring to a country: a flexible working schedule allows individuals to take better care of their families, continue to study, or start their own businesses while working and earning a salary. Furthermore, it provides opportunities for on-the-job learning and skills development in areas such as information technologies and marketing.

However, the study also found that OO is, in most cases, a supplementary rather than a primary source of income. Earnings from OO work are often used by workers in developed countries for discretionary items and not for typical essential expenses. This allows OO to appeal to developed and developing

countries alike, as OO workers who only work online part time can still benefit by adding to their discretionary income. As a result, governments should pursue policies that allow countries to leverage the opportunities that this new sector offers, but should avoid making OO the core of their employment strategies. Online outsourcing could be an important complement to a country's employment strategy, but such a strategy needs to be anchored in other sectors or industries.

The study also found significant barriers for disadvantaged young people to benefit from OO. In the short term, governments should be realistic about the likely scale of the impact that OO could have on this segment of the population. Lack of access to the infrastructure required and, more critically, the lack of skills necessary to procure work and thrive on OO marketplaces are still major bottlenecks. These barriers are unlikely to be fully overcome in the short term.

CHAPTER 5. ASSESSING COUNTRY READINESS FOR ONLINE OUTSOURCING

A structured assessment framework, and an online toolkit is available at www.ictforjobs.org, in order to assist policy makers and development practitioners assess a country's readiness to leverage the online outsourcing (OO) opportunity. This study reviewed existing frameworks of related industries such as offshoring, outsourcing, and impact sourcing, in order to develop the readiness framework. The rationale for applying the traditional offshoring/nearshoring industry development framework for OO is justified because similar key factors apply to both industries. Both the traditional and the new OO approach provide ITO/BPO/KPO services globally, although OO is typically more informal and unstructured in nature.

Table 5.1 compares the main categories that the reviewed offshoring/nearshoring frameworks include.

Table 5.1 – Frameworks to Assess Countries' Competitiveness for Offshoring/Nearshoring Industries

Accenture's framework for impact sourcing	Farrell's framework for offshoring	World Bank's LRI for IT-enabled services	A. T. Kearney's LAI for offshoring	Gartner's 10 criteria for IT offshoring
Scalability (i.e., English and high education availability)	Availability of skills	Talent pool	People and skills availability	Labor pool
Business environment	Environment	Business and living environment	Business environment	Educational system
Market potential	Market potential	Industry maturity	n.a.	n.a.
Risk	Risk profile	Country risk	n.a.	n.a.
N/A	Quality of infrastructure	Infrastructure	n.a.	e-Infrastructure
Government support/incentives	n.a.	n.a.	n.a.	n.a.
Startup cost	Cost	Cost	Financial attractiveness	Cost
Run/Maintain cost	n.a.	n.a.	n.a.	n.a.

Source: Bulloch and Long 2012; Farrell 2006; Sudan, Ayers, and Dongier 2010; A. T. Kearney 2011; Gartner 2008.

Note: n.a. = not applicable.

As illustrated by Table 5.1, existing competitiveness frameworks assess similar aspects, often grouping and naming them differently. The relevance of these different factors to the OO sector varies. The framework structure proposed in Table 5.2, constructed following a review of the frameworks shown in Table 5.1, is intended to evaluate the readiness of countries for the OO industry.

Table 5.2 – Proposed Framework for Assessing Countries’ Competitiveness for Online Outsourcing

Category	Factor
Talent availability and quality	Workforce size & demographics
	Skills & expertise
Cost	Labor rate
	Connectivity cost
Infrastructure	Devices (i.e., computers)
	Connectivity
	Power
	Payment platforms
Enabling environment	Business environment
	Government support
	ICT service culture & maturity

The factors shown in Table 5.2 were further divided into subfactors as appropriate; Table 5.3 illustrates some of the potential metrics that could be used to quantify these factors. The potential data source for each metric is shown in parentheses.

The OO toolkit developed is easy to use, web based, and provides a quick readiness assessment in terms of a country’s relative national strengths and weaknesses with regard to its participation in the OO industry. The output of this tool, combined with additional offline analysis, could then be used to analyze constraints and opportunities and develop strategic options for specific countries. The OO toolkit has a database that extracts and aggregates the relevant indicators and data from the data sets specified in Table 5.3. Users are able to select a country and the tool will present the relevant analysis and indicators.

The OO toolkit relies on publicly available data sets (those defined in Table 5.3). The different indicators are weighted to calculate an average score for each of the four main model categories: talent, cost, infrastructure, and enabling environment. These four categories are themselves also weighted and averaged into a single OO readiness score. The toolkit includes visual representation of these different scores in radar charts and cross-country comparisons along these four dimensions.

The toolkit also allows the user to model a country’s readiness position for different market segments, based on the country’s targeting of low, medium and high complexity tasks, and its associated market segments. A country will probably require the same infrastructure and enabling environment no matter whether it competes in high or low complexity tasks. But competing in software development (that is, a high complexity task) requires trained workers with specific IT skills, often from university programs, while data entry (that is, a low complexity task) might require less well-trained and expensive workers, often straight from secondary school. From a country’s perspective, it is important to understand its relative position compared with other countries to select the most appropriate target tasks and segments, which the toolkit will help to identify.

Table 5.3 – Proposed Metrics for Assessing Countries’ Competitiveness in Online Outsourcing

Factor	Subfactor	Metric
Workforce size and demographics	Population	Labor force, total (World Bank)
		Urban population (%) (World Bank)
	Unemployment	Unemployment, total (% of total labor force) (modeled ILO estimate) (World Bank)
		Unemployment, youth total (% of total labor force ages 15–24) (World Bank)
Skills and expertise	Digital literacy	Internet users (per 100 people) (World Bank)
	General literacy and numeracy	Literacy rate, youth total (% of people ages 15–24) (World Bank and GSMA)
		Secondary school participation (%) (UNICEF)
	Technical and functional skills	English speakers (%) (Wikipedia)
		Tertiary education enrollment (per 100,000 habitants) (UNESCO)
	Quality of math and science education (WEF)	
Labor cost		Elance average hourly rate per country (ELANCE)
		Average wage (ILO)
		Minimum wage (ILO)
Connectivity cost		Price of mobile-broadband services, % of gross national income per capita (ITU)
		Fixed-line broadband tariff (PTR)
		Cyber café rates (FP or CC)
Devices	Computers	Households with a computer (%) (ITU)
Connectivity	Internet service	Maximum network download speed (Mbps) (GSMA)
	Last mile access	Fixed (wired) broadband subscriptions (% of population) (ITU)
		GSM coverage (% of area) (GSMA)
		Ratio of mobile connections to total population (GSMA)
Power	Coverage	Electrification rate (GSMA)
	Reliability	Quality of electricity supply (WEF)
Payment platforms	Availability of card payments	Debit card penetration (WEF)
	Availability of bank transfers	Penetration of bank accounts (WEF)
Business environment	Ease of doing business	Time to resolve a legal dispute (World Bank)
Government support	Regulation	Rigidity of hiring and firing practices (WEF)
	Support for digital industry	Importance of ICT to government vision of the future (WEF)
		Government success in ICT promotion in the country (WEF)
ICT services culture & maturity	Exports	ICT service exports (% of service exports, balance of payments) (World Bank)
		ICT service exports (BoP, current US\$) (World Bank)
	Business adoption	Extent of business Internet use (1–7, 1 = not at all) (WEF)
	Social media use & penetration	Social network use (web index)

Note: CC = cybercafes.com; FP = The Foreign Policy Group; GSMA = GSM Association; ILO = International Labor Organization; ITU = International Telecommunication Union; WEF = World Economic Forum.

CHAPTER 6. HOW CAN GOVERNMENTS IMPROVE COMPETITIVENESS?

As seen in industries related to online outsourcing (OO), such as ITO/BPO/KPO, governments can play a significant role in maximizing their own country's competitiveness in global employment markets by putting in place policies to maximize the social and economic benefits of OO. The growth of the Indian BPO and software industries is, in part, attributed to government policies that established software parks with financial concessions and reliable infrastructure, large-scale investments in university research and development, and accreditation schemes to ensure the supply of trained workers (Kumar and Joseph 2005).

Through structured interviews with workers, OO firms, industry experts, and government officials, this study has identified two broad actions government can take. They may:

- enact positive policies that enable and promote the growth of the OO industry; and
- remove legislative and regulatory barriers that inhibit the growth of the OO industry.

More specific, context-based actions can be identified by applying the OO toolkit described above, as it provides a deeper and more detailed analysis of the OO-specific issues facing each country and can be used to identify relevant policy actions that could be taken.

Because the OO industry is so new, specific examples of policies that encourage its growth are limited. Wherever these examples exist, attention has been drawn to them. Online outsourcing is similar to the ITO/BPO/KPO industry, in that it requires Internet and energy infrastructure, an English-speaking and technologically literate workforce, and an enabling environment that facilitates trade across borders. Wherever appropriate, policy lessons have been drawn from these more mature industries.

While governments can take the OO industry development measures discussed below, risks and issues exist when implementing such policies because OO is still at a nascent stage. It is recommended that a light-touch approach to be taken at the initial stage of industry development, such as taking a piloted and/or phased approach, in order to explore OO and mitigate the risks at the same time.

ENABLING AND PROMOTING ONLINE OUTSOURCING

Growth of the OO industry is driven by an open market, but a number of actions can be taken by governments to promote this growth. These include identifying and targeting markets segments, developing the relevant strategy, implementing policies that ensure a supply of suitable workers, expand access to and quality of infrastructure, generate demand, and develop intermediary/agency models.

RELEVANT STRATEGY FOR TARGETED MARKETS

The OO industry development program a country undertakes will depend to a large extent on whether the country targets either (or both) online freelancing or microwork, and to a lesser extent on either (or both) open or managed services marketplaces. This is because each of these industry segments and the types of marketplaces have highly differing requirements for participation, especially in terms of the quality and quantity of available talent, cost structure, and last mile infrastructure, such as Internet access and power.

Online freelancing workers need to have significantly higher skills for higher complexity tasks, such as software programming, graphics design, accounting, and so on. In contrast, microwork typically requires basic computer and Internet literacy (and the associated language) skills for lower complexity tasks, such as digitization or data entry. The microwork segment is also more cost sensitive, since lower complexity tasks may be competed for by developing country workers who may generally offer more competitive rates for work or are more willing to take up lower paying tasks given their generally lower wage structures and GDP per capita.

Open services platforms also require more extensive training programs in general, unlike managed services platforms whereby training is provided by the firms. In addition, open services marketplaces typically require a higher level of computer and Internet access by the population, as firms operating managed services marketplaces are more likely to provide work facilities with the necessary infrastructure for work.

Countries with larger geographies and population sizes are also generally in a better position to target multiple segments and marketplaces, given the higher diversity in terms of capabilities and resources within each country. Smaller countries may have to be more selective and targeted, given the lower diversity of capabilities and resources they can offer. As seen in the larger traditional offshoring/nearshoring markets, large and small countries can compete effectively in providing ITO/BPO/KPO services, particularly by focusing on niche market segments. In addition, the less structured nature of OO provides a greater opportunity for developing countries than offshoring/nearshoring because OO has relatively less structured requirements than the traditional approach. Online outsourcing does not have such stringent requirements for Internet connectivity, class "A" office space, IT-related laws and regulations, tax incentives, and so on.

A country's industry development strategy could also include an intermediary or agency approach, whereby it encourages international or local OO firms to begin operations in the country. This approach could help to address several core issues that are relatively difficult to address from the strategic perspective or within the industry development program, such as the lack of international micropayment services (for example PayPal) or low computer and Internet access by the population in general. These intermediaries could receive payments on behalf of OO workers and distribute them via cash, checks, or local fund transfer mechanisms, and provide the necessary working facilities for OO workers. In addition, these intermediaries could address the cold start issue by acquiring jobs through the online marketplaces and distributing them to local workers. Countries subject to U.S. antiterrorism financing laws, where most OO work originates from, could also use intermediaries to address this issue. Intermediaries could also formalize the labor as they could contract these workers, offer local labor rights, and bring OO workers into the formal taxation structure.

Countries may also opt for a phased approach for industry development by targeting lower complexity tasks in the initial stage, and moving up the value chain in the later stages when the country and its workers are more familiar with OO market segments and task requirements, or have improved their understanding of their comparative strengths and weaknesses. The online readiness assessment toolkit will help countries to identify their areas of comparative strength and weakness in the initial and subsequent phases, and target the appropriate market segment or marketplaces for industry development.

ENSURING A SUPPLY OF SUITABLE WORKERS

Ensuring a supply of suitable workers requires having the right training programs in place, addressing negative perceptions on OO from potential workers, and assessing whether this industry fits well within existing cultural and social norms and behaviors.

Training Programs

Governments could support and subsidize various types of training for their young people, in order for them to better understand the OO market and have the skills to be more competitive. Bundling training courses with an internationally or nationally recognized accreditation system to certify that students have attained a certain level of skills could make it easier for workers to get online jobs. For example, the NASSCOM assessment of competency framework (NAC) and common industry certification provides a benchmarking of skills required to work in the IT-enabled service industry in India (NASSCOM 2008).

Short term: OO orientation training for workers with the necessary skills is a possible quick win to rapidly increase the local labor pool's participation in the industry. International experience suggests that a significant majority of workers with the English, computer/Internet and technical skills needed for each task are still not able to participate in these OO marketplaces because they are not familiar with this new industry and its approach to work. They need assistance with:

- knowing and understanding the various types of OO marketplaces that exist;
- the types of tasks that they could undertake and finding their competitive niche;
- improving their profiles and marketing themselves;
- proposing and negotiating with clients;
- ensuring quality and timely delivery;
- receiving payments; and
- building a long-term relationship with clients.

Hence, orientation training may include classroom sessions with introductions to the various marketplaces and the selection considerations for each worker, as well as practical training on how to search, bid, deliver, collect payment, build performance reputation, and so on. Some private training institutions in Bangladesh are already offering such training on a commercial basis. For example, the Online Learning Center Bangladesh offers specific training to guide and teach students the skills required to be successful in OO. The center offers courses that range from an introduction to OO skills, where students are introduced to some of the most popular marketplaces and taught how to bid for jobs, and use some of the basic tools (for example, Excel, Word, Gmail, Skype, and Facebook).²⁶

Most likely it will be necessary to provide extensive hands-on guidance and ongoing advisory support for workers, because OO orientation programs are unlikely to be sufficient for new workers to leverage OO for long-term jobs and income. Trainers and mentors can provide on-the-job guidance to help workers win and deliver their first few jobs, build a good online reputation, maintain their competitiveness, and move up the value chain of tasks for increased earnings and career development. Such OO orientation programs should be comprehensive because, although international experience suggests that light or limited training has been highly effective in building awareness and registration in OO marketplaces, this has not been effective in building active participation by OO workers, as only a limited proportion are successful in acquiring, delivering, and receiving remuneration for OO jobs. Although Bangladesh has OO training programs that helps create awareness of OO work and has helped hundreds of thousands of workers register on various marketplaces, interviews suggest that there has been limited active

participation by these workers because such light-touch training is insufficient for workers to become familiar with using the marketplaces or to win jobs online.

Short-term technical training for specific types of work or marketplaces could also help workers to access more and better jobs. The technical skills of workers could be appropriately refined and strengthened in the short term so that they become more competitive. Such training could be conducted for low- and mid-complexity work, such as computer and Internet usage for digitization or data entry tasks, or for higher end work in web design, social media marketing, and basic search engine optimization. Some OO firms also have stringent criteria for the selection of workers. For example, Rev.com, a high-end transcription outsourcing marketplace, is open to workers from anywhere in the world, although they have to pass a rigorous test before being allowed to register for work. In interviews, Kenyan workers reported that they aspire to work on Rev.com because of its higher pay, but that they often struggle to pass the test; Rev.com reports that about three percent of its workers globally come from Kenya.²⁷ The biggest challenge for greater enrollment in this open services platform seems to be the ability to work with, and understand nuances of, foreign accents at high speed. This however, is a skill that can be improved with appropriate short-term technical training.

Long term: The lack of English-language literacy and IT proficiency is a major barrier to hiring high-school educated workers.²⁸ One potential government intervention that could help to maximize the impact of OO is to ensure that high-school education conveys basic English-language literacy and IT proficiency. Improving training and education for a broad base of workers improves the broader business environment and provides useful skills beyond the OO industry (Sudan, Ayers and Dongier 2010).

A country's competitive position may also be improved by investing in high-quality technical education through universities, vocational training centers, or other technical schools. Ukrainian analysts report that one of the major competitive advantages of their country is the high-quality, Soviet-era technical training schools and universities that remain. As a result, Ukrainian online freelancers have strong technical skills, particularly for complex software tasks.

Evolving Perceptions

Another barrier to further engagement of workers in OO is a perception that it is too challenging, or that barriers to entry are high. In addition to skills development, raising awareness among potential workers, supporting on-the-job training, and mentoring potential workers to learn how to navigate the system are key interventions that can help potential workers get their first job, perform well, and build a reputation. Training and mentoring should include demonstrating to workers how to sign up for marketplaces, how to register for payment systems, and how best to market themselves to find work. For example, as part of the Digital Malaysia Initiative, in 2014 the Malaysian Prime Minister announced plans to establish a number of eRezeki community centers,²⁹ to serve as hubs to support the onboarding and training of thousands of digital workers in Malaysia. These will be linked with digital work centers that can provide ICT and digital literacy training (and access to computers) for disadvantaged workers in Malaysia (Crowdsourcing.org 2014). The World Bank-supported NaijaCloud initiative held a public workshop in 2013 with current workers and staff from Elance, oDesk, CrowdFlower, MobileWorks, and Samasource who talked to potential workers and clients. This single 2013 workshop led to a 28 percent increase in the number of active Nigerian workers on oDesk³⁰ and this initiative is now being rolled out across the country by the Nigerian government.

Compatibility of the Work with Social Perceptions and Behaviors

Finally, raising awareness and enhancing the workforce's skills to compete in OO might not be enough. In some countries, the social norms and behaviors, as well as other external factors, might affect the ability of their populations to engage in this new industry. For example, Nigerian workers suffer from Nigeria's poor global reputation, and some Kenyan women suffer the opposition of their families, because working with computers is not a traditional role for women. In addition to using the OO toolkit, an offline analysis that takes into account perceptions of the country, as well as the country's social perceptions and behaviors, may give insight into workers' suitability for OO.

INFRASTRUCTURE: ACCESS AND QUALITY

Across Africa, a large percentage of Internet subscribers access the Internet through mobile devices. In Kenya, for example, 99 percent of Internet subscribers use mobile devices for this purpose (including 3G dongles, mobile phones, and tablets) (GSMA 2014).

Internet Access and Electricity Infrastructure

Internet access in developing countries is increasingly driven by the cost of mobile tariffs. The cost of mobile Internet varies dramatically across the African continent: a 1GB package of data can cost as little as \$4.7 in Kenya; this is less than one-tenth of the cost of 1GB of data in Cameroon (where it costs \$53) and Botswana (where it can cost up to \$85) (Research ICT Africa 2014). These high costs can be addressed through national policies to enable competition and remove regulatory barriers for mobile network operators, by increasing the availability of the radio spectrum for high-speed mobile broadband, and by providing subsidies for Internet service providers. By increasing access to mobile broadband, governments can ensure last-mile Internet access without requiring the slow installation of high-cost fixed broadband lines.

Ensuring access to rural electricity and the Internet enables the growth of rural OO, maximizing its potential social impact by reducing rural-to-urban migration. Some governments have launched programs to improve infrastructure for their rural populations. For example, the Indian government has policies that increase rural access to grid electricity and the Internet, including large-scale subsidization of the grid connection fee for base-of-the-pyramid households (India, Ministry of Power, 2014). This improved access has contributed to the growth of the rural BPO industry and is also enabling a young rural microwork industry to develop. WorkNHire reports that investments in last-mile electricity and connectivity have allowed rural university-educated workers in India to freelance online.

Computer Access

Access to computers is a fundamental requirement to engage in OO. Many potential OO workers in developing countries still lack access to computers. Programs that maximize the use of existing infrastructure, and of computers specifically, can help lower the entry barriers for the least privileged. An example can be found in Malaysia, where the government has funded more than 2,000 telecenters that provide free access to computers and the Internet for workers.³¹ Although little hard evidence on the effectiveness of this type of investments exists, once the infrastructure has been deployed, governments can open them to OO workers to maximize their use and support the growth of the OO industry in the country.

Partnerships with existing NGOs or government programs to facilitate computer and Internet access could help make OO more accessible. It may be possible to leverage these types of programs, including existing government-supported facilities, to provide disadvantaged young people with access to the IT infrastructure they need to participate in OO.

There is little opportunity in the short term to leverage the rapid growth of mobile devices for OO. Smartphone ownership is growing rapidly—at 40 percent per year in Africa (GSMA and Deloitte 2012)—but to date, no marketplaces appear to enable mobile-phone based work on a large scale. The largest mobile platform, Jana, targets emerging middle-class consumers and exposes them to marketing from global firms. People on Jana are “paid” in mobile airtime. Conversations with industry experts and OO firms reveal a perception that the market for mobile phone based OO was limited (and shrinking) given the limitations of mobile software, and the fact that the types of work that can be performed on mobile platforms can increasingly be performed more quickly (and at lower cost) by advanced machine learning software.

Payment Systems

Another frequently cited barrier is regulation that restricts the transfer of payments between countries. Direct bank-to-bank transfers are often limited by high costs as well as by international antiterrorism and antimoney laundering regulations. Evidence of whether payment platforms are a limiting factor is mixed. Officially, OO firms say that paying workers is not a major barrier: services such as PayPal work in most contexts. However, in some countries (for example, Nigeria), PayPal does not yet allow direct payment to individuals. In these contexts, OO firms say that alternative platforms such as Payoneer and Skrill allow workers to be paid. Payoneer, in particular, transfers earnings onto a prepaid debit card that can be used in shops or at ATMs to withdraw cash, which allows payments to disadvantaged young people and women who do not have formal bank accounts. In contrast to the firms’ stated positions, OO workers in Kenya say that difficulty getting paid provides a real barrier for them to do more work, and furthermore this difficulty presented a barrier to them starting OO.

The source of this discrepancy could be workers’ perception of the complexity and high costs of receiving payment; enabling OO workers to be paid into their mobile money accounts would remove any real (or perceived) payment barriers. Paying OO workers into mobile money accounts is theoretically possible in some contexts, although no OO workers reported that they were able to make this work in practice. In Kenya, 93 percent of the adult population has registered for mobile money transfer through M-PESA (Hanouch and Kumar 2013). Samasource allows workers to be paid with M-PESA through their local delivery centers, although this does not often occur in practice as it becomes complicated to manage HR processes if normal payroll procedures are not used. It also appears possible to send money from Skrill to M-PESA, but OO workers did not appear to be aware of this option. Workers report cases in the informal sector where Kenyan workers taking on other people’s freelance work are paid through M-PESA,³² but no other examples of OO workers being paid using mobile money have been found in other countries.

Paying workers through mobile money accounts would require setting up payment models that include an intermediary company that receives international transfers through PayPal (or other online payment methods), which then transfers the money locally through mobile money services. Another option would require implementing international transfers of mobile money. There is a new service, called BitPesa, a digital currency exchange that can convert from Bitcoin to M-PESA. As Bitcoin, a digital currency, can be transferred internationally over the Internet without fees, BitPesa facilitates international transfers of funds into Kenyan mobile money accounts. This is a new service and none of the OO workers reported using it to receive payments, although as BitPesa grows, it may contribute to reducing the costs required to pay OO workers.

However, governments have little influence over how OO marketplaces pay their workers. Governments can enact policies that expand access to banking services for their populations as a first step. In addition to their regulatory role, governments can also act as facilitators between international marketplaces and local payment channels, creating e-payment infrastructures that better fit workers' needs.

GENERATING DEMAND

As discussed in Chapter 2, online outsourcing firms and industry experts reported that the primary constraint to growth of the OO industry is client demand. Governments have a variety of roles to play in generating demand for OO, both in the public and private sectors.

Private Sector Demand

Private sector demand for OO can originate in global or regional/local markets. However, there is substantial doubt about whether governments in emerging economies can effectively drive private sector demand in countries such as the United Kingdom or the United States. Because OO firms are private entities, it is already in their interest to generate demand for their services. Interviews with OO firms suggest that they are already working to generate further demand in these countries, and that they are better positioned to do so than governments.

With regard to local or regional private sector demand in emerging markets, there are only isolated examples of OO firms that target local markets (for example, Taskty in Egypt and Jobreneur in the Palestinian Territories). WorkNHire is an example of a global OO firm that started by targeting local clients (in India), through public and online marketing campaigns.

Governments are taking different approaches to encourage local private sector demand. In Nigeria, the government is playing a facilitator role, holding public events to raise awareness of the OO industry (for both workers and clients) and bringing global OO firms (for example, Upwork) into the country to talk to potential clients about how they can use OO services. The Malaysian government's Digital Malaysia initiative is exploring how digital and technology-enabled services can drive employment and economic growth in the country. Projects include developing on-demand online education for computer literate young people and facilitating microwork to generate income for the bottom 40 percent in Malaysia.

Public events and communication campaigns can help mobilize local private sector demand. Additional targeted conversations with potential clients may be needed to address the concerns that clients report when transitioning from traditional employment models to hiring OO workers. Firms that currently rely on OO reported that they were skeptical about this new industry before registering; they often waited until they had seen colleagues and competitors successfully use OO. Governments can help by setting up and publicizing demonstration projects that prove the value of using OO services for local firms.

There is a concern that, by driving local private sector demand for OO, governments may simply redistribute jobs from physical work (for example, within a firm) to OO. In this situation, indigenous OO would not lead to any new jobs and would not address the challenge of youth unemployment in developing countries. No quantitative data are available to explore this in more depth, but it is highly likely that OO will lead to redistribution of some jobs. It is also true that the opportunities generated by OO may lead to the creation of additional jobs. For example, SMEs can use OO to hire low-cost graphic designers to create a logo, where previously they would simply not have any corporate branding.

In the long term, OO firms can use local demand to build an international reputation, to perfect their marketplace, and scale before targeting international clients. An example is WorkNHire, an Indian OO marketplace that was initially open only to Indian clients. Having achieved sufficient scale and financial sustainability, WorkNHire is now targeting clients from across the globe. Although government programs to generate local in-country demand may lead to the redistribution of jobs in the short term, in the long term it can help indigenous OO marketplaces grow and position themselves to compete in global markets.

Public Sector Demand

Online outsourcing firms and industry experts report the high potential of tapping into public sector demand for OO. However, significant doubts remain about practical and administrative barriers. As part of a broader push for transparency, governments in Africa (including Kenya, Nigeria, Rwanda, and South Africa) are digitizing their records and putting them online. For example, the Rockefeller Foundation funded an initiative for the Kenyan National Council for Law Reporting to convert online content into a universally accessible format and for Kenyatta National Hospital to digitize its medical records in 2011 and 2012 respectively. While traditional BPO firms conducted both of these projects, they could have been conducted by OO firms. Public sector contracts for digitization represent a substantial opportunity for the growth of an OO industry in developing countries: firms report that accessing one to two large-scale government contracts would provide regular, reliable income for firms (that would be passed on to workers) and raise the profile of OO in emerging markets. In addition, large government contracts would showcase the potential of OO and could help kickstart local and regional private sector demand in emerging markets.

OO could deliver benefits for governments too, by providing digitization and analysis of paper data quickly, cheaply, and flexibly. Just as in the private sector, OO also provides governments with easier, quicker, and more flexible access to highly skilled talent. Governments can play a role in making their procurement processes simpler and their security requirements more transparent, enabling OO firms to bid for public sector contracts.

Online outsourcing firms currently indicate that lengthy and complex procurement processes are a barrier to their ability to access government contracts for OO. Risk-averse governments are also perceived to be reluctant to employ a distributed workforce, preferring instead to use firms with a centralized workforce for reasons of data protection.

Some governments are overcoming these obstacles already. In the microwork space, the Edo state government in Nigeria is reported to be procuring digitization of their traditional paper records using OO firms. In the online freelancing space, the U.S. government has a Virtual Student Foreign Service program³³—a system by which college students freelance as online interns for 10 hours per week for departments including USAID and the U.S. State Department. These online interns perform work that is similar to that performed on freelancing marketplaces: they contribute to written reports, create online forums, and conduct research, for example.

Given the challenges faced in improving public sector procurement processes and the size of this market, its potential appears limited at present. Governments can, however, create policies or modify existing policies making provisions for the use of OO (for example specifying that a certain percentage is outsourced through OO). Such policy measures would increase the growth of domestic demand and encourage the private sector to also outsource to OO workers.

REMOVING LEGISLATIVE AND REGULATORY BARRIERS

Besides promoting and implementing positive policies to stimulate the growth of the OO industry, governments can play a constructive role in removing regulatory and bureaucratic barriers. Because OO (both microwork and online freelancing) represents a new way of doing work, a major challenge is the lack of clarity and certainty about how existing frameworks apply to OO. Specifically, these frameworks include tax, minimum wage, and part-time employment laws.

Employment law in most countries is currently poorly equipped to regulate the OO industry. Some U.S.-based OO firms report that the uncertainty over legal and regulatory conditions is limiting their expansion in emerging markets. Putting in place explicit provisions that account for OO and clarifying the responsibilities of workers, clients, and firms will minimize the administrative and regulatory burden that these firms currently face when attempting to enter and grow in new markets. Such certainty can also encourage new workers to join the OO market. In addition, general barriers to doing business can limit the growth of startups and SMEs, which constitute the engine of local demand for OO services.

TAXATION

OO workers report that they often do not know which tax requirements apply to them. However, most do not pay taxes on their earnings from OO. These same workers report that the enforcement of compliance with their tax obligations by the government would create a barrier for the growth of the industry.

Some countries have taken the opposite approach and enacted tax-benefit policies for OO workers. Bangladesh has a policy where all earnings from OO work are currently tax free (Hardy 2012), and Malaysia has national guidelines stating that income from “home-working” is tax exempt.³⁴ How long this will last is unclear, but this kind of positive policy helps to minimize regulatory and psychological barriers and encourages more workers to participate.

In some cases (for example, oDesk Payroll, Elance Payroll), an OO firm gives workers the option of becoming formal employees. If they choose to do so, the firm puts workers onto a payroll (currently this only applies to workers in the United States and Canada). In these cases, the firm can manage invoices and deduct taxes directly. This is appealing to workers, although the administrative challenges of complying with employment law globally mean that this option is likely to be possible in only a small number of countries.

In some countries (for example, Egypt), the burden of taxation falls on OO firms but tax policy does not have explicit provision to tax OO workers. This leads to administrative and financial challenges for Egypt-based OO firms. Making explicit provision within tax law for online freelancing (and transferring the responsibility for paying taxes directly to workers) would remove a barrier to OO's growth in Egypt. Although this would transfer the burden of managing taxes onto workers, it is unclear if this would affect the supply of workers.

MINIMUM WAGE AND PART-TIME EMPLOYMENT LAW

There is concern within the industry about legal action that may be taken if minimum wage laws are interpreted so that OO contravenes existing regulation. Minimum wage regulations, in particular uncertainty about whether these regulations apply, may affect the growth of OO. Governments in developing countries need to make an explicit decision between the social good of ensuring a fair

minimum wage for workers and the potential economic impact that minimum wage laws may have on the growth of the OO industry.

The issue of part-time employment law also needs to be considered. Some countries have strict part-time work laws, and any employee who is employed part time for a specified period (for example, one year) must receive the same rights and benefits as a full-time employee. In Ireland, where part-time workers make up 20% of the workforce, the Protection of Employees Act provides equal treatment to part-time workers, including those engaged in microwork. While such laws protect part-time workers from exploitation, they are not universal and can create asymmetries in the market. In this event, governments of developing countries could consider other policy options.

EASE OF DOING BUSINESS

Online outsourcing firms that operate managed services marketplaces (for example, CloudFactory, Samasource) need either to set up businesses in each country where they wish to operate, or to work with an established and credible local partner. While the current scale of such firms is much smaller than open services platform models, developing an indigenous managed services marketplaces industry could have a large social impact if this model is used to target disadvantaged populations.

The common barriers cited by such OO firms in setting up new country operations are largely similar to those cited by other foreign direct investment operations. These include the difficulty in obtaining work permits for expatriate staff to enable them to set up new offices, administrative bureaucracy in formally registering a company, and the difficulty in registering for business bank accounts. Addressing these obstacles with specific policies would stimulate OO business. Policies that improve the general business environment would also promote private sector growth and employment beyond just OO. Online outsourcing firms targeting the local market (for example, WorkNHire) reported in interviews that, because a large percentage of their demand comes from startups and SMEs, policies that promote local entrepreneurship will also help generate additional local demand for OO services.

CHAPTER 7. WHAT ADDITIONAL RESEARCH IS NEEDED?

This report represents an initial attempt to understand the global size and impact of the online outsourcing (OO) industry. Given the industry's nascent state and the limited availability of quantitative data, a number of gaps in global information about OO need to be filled to make the most of its potential. These major research gaps are listed below:

- **Additional insights into demand drivers for OO.** This study found that the primary constraint to the future growth of OO is demand generation. In order to better understand and shape its growth and its market size in the long term, a fuller appreciation of how demand differs between multinational corporations and SMEs, as well as how it differs and across industry sectors, is needed. This includes ascertaining how the value proposition of OO should be customized to stimulate demand across different type of organizations.
- **Nonfinancial impact of OO.** There is insufficient literature on the nonfinancial impact of OO to date. The report identified only Upwork (formerly Elance and oDesk) as a provider of social benefits for OO workers. Upwork offers 401(k) savings plans and group health insurance plans through the marketplace if the workers work at least 30 hours per week on average. However, this service is still limited only to workers in Canada and the United States. Given the difficulty in winning contracts with Upwork, the number of those who are benefitting from this could be marginal. More research on the short and long term effects of OO on workers across the globe would enable deeper knowledge and understanding of this important impact.
- **Actual salaries of OO workers.** Although some data are available on the hourly rates that OO workers charge, this does not reflect average earnings or the time that OO workers spend bidding for work, nor does it reflect the fact that most OO workers are not able to work full time. The study gathered some preliminary evidence on the potential income that could be generated through OO in Kenya and Nigeria. However, additional data gathering and research is required to build a more comprehensive and deeper understanding of the socioeconomic impact of OO.
- **Long-term career trajectories.** The study found that long-term career trajectories of OO workers are not sufficiently understood. To a certain extent, this lack reflects the young state of the industry, but additional work needs to be done to better appreciate both whether the experience and skills gained through OO are transferrable to other professions, and whether workers are able to make long-term careers within or outside of OO work.
- **Factors that lead to “drop-outs.”** This study suffers from a degree of selection bias, in that the people interviewed were those who have succeeded within OO work. A longitudinal study that followed newly registered workers would create a better understanding of what proportion of workers are able to turn OO into a career, and what factors drive the decision for people to leave OO work. Such information could help better understand the real opportunity that OO offers in developing countries.
- **Demographic information on the profile of users.** Although this study used available public data to understand the profile of users, and combined this with qualitative interviews to develop worker archetypes in Kenya and Nigeria, much of this information is not directly comparable

across marketplaces. In order to fully understand and compare the demographic profile of workers across microwork and online freelancing marketplaces, a single consistent survey would be needed.

- **Impact of OO on job creation.** Online outsourcing is expected to have two different effects: on the one hand, it provides the ability for workers to perform jobs that were not previously accessible locally, or for companies to get jobs done for which it was previously too expensive to hire someone. This effect leads to new job creation. On the other hand, OO leads to a redistribution of existing jobs, for example, moving software development jobs from the United States to Ukraine. Additional research is needed to understand these two different dynamics, to quantify their contribution to the size of the total market, and to identify levers that can enhance the job creation potential of OO.
- **Conversion from part-time to full-time OO workers.** There is still insufficient knowledge of the likelihood for new OO workers to transition from part-time to full-time work. Limited research to date suggests that once a worker builds experience and establishes a positive reputation on such marketplaces, then there is a significant probability that they will convert into the equivalent of full-time work. However, further research is needed to understand whether this has occurred mainly for developed countries and online freelancing, and not for developing countries and microwork.
- **Cold start problem.** In OO, new workers face a challenge in that they need to have work history and reviews to build their reputation in order to secure new tasks. The number of registered workers that are inactive underlines the extent of this problem. It is important to examine models for mitigating this challenge.
- **Access to OO jobs.** In OO, the primary beneficiaries are the population that has access to the Internet and online payment system. Further research is needed to identify whether OO is only applicable to those who are “reachable” or whether it can be extended to the “unreachable” population through training and extra support.

NOTES

¹ Elance and oDesk merged in March 2014, and Upwork was launched in May 2015.

² In most cases the client selects the workers directly; however, in some cases the platform assigns workers to clients.

³ Samasource does not directly hire OO workers. It partners with delivery centers, and the delivery centers hire workers who perform the work on Samasource's online managed services marketplace.

⁴ Crowdsourcing.org surveyed 32 OO marketplaces (microwork and online freelancing), 15 of which responded with detailed gross service revenue data. The total gross service revenue data from these 15 marketplaces was broken down according to the industry sector that generated demand for OO work.

⁵ Dalberg analysis, using data from (Elance 2014).

⁶ Information from qualitative stakeholder interviews

⁷ Dalberg analysis, using available public data.

⁸ Zhubajie/Witmart is an OO firm that also provides a marketplace to contract local workers for physical tasks. The size of Zhubajie/Witmart's revenue from OO has been estimated through expert interviews.

⁹ On the average, 10 percent of workers registered on OO marketplaces are active, based on interviews with leading OO marketplaces.

¹⁰ This figure is based on expert interviews with academics and industry experts, who considered a worker to be active if they complete at least one task per month. It is unlikely that completing only one task per month creates sustainable income for developing country workers, therefore the number of workers who can make a living out of OO is significantly lower than the figure estimated in this section.

¹¹ Dalberg analysis, based on expert interviews

¹² Dalberg analysis, based on expert interviews.

¹³ The number of globally registered OO workers was estimated using available public data from OO marketplaces, and the same assumptions used to estimate the size of the market. Future trajectory in the number of registered OO workers was estimated using the same methodology as the future projections of the market size.

¹⁴ Dalberg analysis, using data from UNESCO, <http://data.uis.unesco.org/index.aspx?queryid=161&lang=>.

¹⁵ This is a conservative estimate of wages for OO workers, which takes into account information on hourly wages from online freelancers and microworkers.

¹⁶ See Net Index Explorer, <http://www.netindex.com>.

¹⁷ While concerns about the quality of university education in developing countries and about employment opportunities for students after they graduate remain, it is assumed that disadvantaged young people do not have a university degree.

¹⁸ OO worker interviews, Dalberg, June 2014. Including focus groups, the total sample size of OO workers engaged in qualitative interviews for this research was 38. Of these, 30 workers were from Kenya, six from Nigeria, one from the United States, and one from the Philippines. Insight into workers from India, Bangladesh, and Ukraine was gathered through interviews with academics conducting ethnographic research with OO workers, and industry analysts.

¹⁹ Interview with Kumar Mukul, cofounder of WorkNHire.

²⁰ Interviews with OO workers and academics, Dalberg, June 2014.

²¹ This is ongoing research, currently unpublished.

²² Profiles are up-to-date as of July 2014. Some of the workers have since moved jobs, or changed the type of work that they do online.

²³ Note: a SACCO is a Savings and Credit Co-Operative. These are member-driven institutions, similar to credit unions, and are the main channel for ordinary Kenyans to access credit.

²⁴ See https://www.odesk.com/info/odeskpayroll_contractor.

²⁵ Philippine Statistics Authority, National Statistics Office Website, accessed in October 2014; interviews and focus groups conducted with OO workers; based on data from Ross et al. 2010; Ipeirotis and Horton 2012; Elance 2014; CrowdFlower 2014.

²⁶ See <http://www.olcbd.net/> for details of this program.

²⁷ Dalberg interview with the founder of Rev.com, 2014.

²⁸ Dalberg interviews with managed service OO firms, 2014.

²⁹ Rezeki means livelihood in Malay.

³⁰ Information from interview with the Nigerian Ministry of Communication Technology.

³¹ Information from interview with the Digital Malaysia Initiative.

³² Workers in Kenya report that it is hard to get work on oDesk until you have a strong positive reputation. In some cases, registered users on freelancing marketplaces act as aggregators of work, taking on large volumes of freelance work and passing it on to contacts and colleagues. In some cases, these “second-order” workers are paid through M-PESA.

³³ <http://www.state.gov/vsfs/>.

³⁴ Interview with Redzuan, Digital Malaysia Initiative.

REFERENCES

- Anderson, Chris (2006). *The Long Tail: Why the Future of Business is Selling Less of More*. New York, NY: Hyperion.
- A.T. Kearney. 2011. *The A.T. Kearney Global Services Location Index*. Chicago: AT Kearney.
- Arabian Gazette. 2014. "Interview: Rich Pearson, SVP, Elance-oDesk." *Arabian Gazette*, June 9. <http://www.arabiangazette.com/interview-rich-pearson-svp-elance-odesk/>.
- Bulloch, Gib, and Jessica Long. 2012. *Exploring the Value Proposition for Impact Sourcing: The Buyer's Perspective*. Accenture and Rockefeller Foundation. <https://www.rockefellerfoundation.org/app/uploads/Exploring-the-Value-Proposition-for-Impact-for-Impact-Sourcing.pdf>.
- China Internet Network Information Center. 2013. *Prospect of Business Process Outsourcing (BPO) and Microwork in Rural China*. Beijing: CINIC.
- China Tech News. 2011. "Trading Volume Of Chinese Witkey Websites Over CNY300 Million." *China Tech News*, January 4, 2011. <http://www.chinatechnews.com/2011/01/04/12952-trading-volume-of-chinese-witkey-websites-over-cny300-million>.
- CrowdFlower. 2014. "Demographics of the Largest On-demand Workforce." *CrowdFlower Blog*, January 10. <http://www.crowdfLOWER.com/blog/2014/01/demographics-of-the-largest-on-demand-workforce>.
- Crowdsourcing.org. 2012. *Crowdsourcing Industry Report: Enterprise Crowdsourcing: Market, Provider and Worker Trends*.
- . 2014. "Malaysia announces the next phase in its plan to become a leading global hub for digital work." December 17. <http://www.crowdsourcing.org/editorial/malaysia-announces-the-next-phase-in-its-plan-to-become-a-leading-global-hub-for-digital-work/35132>.
- Dean, David, Patrick Forth, Neeraj Aggarwal, and Frank Plaschke. 2013. *The Great Software Transformation: How to Win as Technology Takes Over the World*. Boston Consulting Group. http://www.bcg.com/expertise_impact/Industries/Hardware_Software/PublicationDetails.aspx?id=tcm:12-151671&mid=tcm:12-151670.
- Deloitte. 2014. *Big Demands and High Expectations: the Deloitte Millennial Survey*. Deloitte. http://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/2014_MillennialSurvey_ExecutiveSummary_FINAL.pdf.
- Elance. 2011. *Elance Business Survey*. <https://www.elance.com/q/online-hiring-trends-2011>.
- . 2012a. *Global Business Survey 2012*. <https://www.elance.com/q/global-business-survey>.
- . 2012c. *The State of the Freelance Market*. <https://www.elance.com/q/freelance-talent-report-2012>.
- . 2013a. *Women in Technology*. April. <https://www.elance.com/q/women-in-technology>.
- . 2013b. *Predictions for Online Work in 2013*. <https://www.elance.com/q/2013-predictions>.
- . 2014. *Elance Trends*. <https://www.elance.com/trends/talent-available>.
- Elance-oDesk. 2013. *Elance and oDesk Announce Merger*. December 18. <https://www.elance.com/q/press/elance-and-odesk-announce-merger>.
- . 2014a. *Annual Impact Report*. Elance-oDesk. <http://try.odesk.com/annual-impact-report/>.
- . 2014b. *Global Online Work Report*. http://elance-odesk.com/sites/default/files/media_coverage/reports/global-online-work-report-2014-ytd.pdf.
- Farrell, Diana. 2006. "Smarter Offshoring." *Harvard Business Review*. June. <https://hbr.org/2006/06/smarter-offshoring>

- Fort, Karen, Gilles Adda, and K. Bretonnel Cohen. 2011. "Amazon Mechanical Turk: Gold Mine or Coal Mine?" *Computational Linguistics* (37) 2: 413-420.
http://www.mitpressjournals.org/doi/abs/10.1162/COLI_a_00057#.VVBtg5MWCQM
 Report." Sydney: Freelancer.
- . 2014b. "Freelancer Limited Revenue Accelerates to 77% Year on Year." Press Release, February 27.
<http://press.freelancer.com.s3.amazonaws.com/20140227-Freelancer-Limited-revenue-accelerates-to-77-percent-year-on-year.pdf>.
- Freelancer.com. 2014. *Fast 50 Small Business Trends Driving Online Employment for Q1 2014*. Sydney: Freelancer.com.
- Frei, Brent. 2009. "Paid Crowdsourcing: Current State and Progress toward Mainstream business use." Smartsheet.com, September 15. <http://www.3rd-idea.com/wp-content/uploads/2009/09/Paid-Crowdsourcing-Sept-2009-PreRelease-Version-1-Smartsheet.pdf>.
- Gartner. 2008. *Gartner on Outsourcing*. December 19. <https://www.gartner.com/doc/844219/gartner-outsourcing->.
- Glno, Francesca, and Bradley Staats. 2012. "The Microwork Solution." *Harvard Business Review*. December. <https://hbr.org/2012/12/the-microwork-solution>.
- GSMA and Deloitte. 2012. *Sub-Saharan Africa Mobile Observatory*. GSMA.
http://www.gsma.com/publicpolicy/wp-content/uploads/2012/03/SSA_FullReport_v6.1_clean.pdf.
- GSMA. 2014. *Digital Entrepreneurship in Kenya*. GSMA and Omidyar Network.
http://www.gsmaentrepreneurshipkenya.com/GSMA_KENYA-AR2014-060214-WEB-SINGLE-PGS.pdf.
- Hanouch, Michel, and Kabir Kumar. 2013. "Mobile Money, 10 Things You Need to Know." *CGAP Blog* December 30. <http://www.cgap.org/blog/mobile-money-10-things-you-need-know>.
- Hardy, Quentin. 2012. "The Global Arbitrage of Online Work." *New York Times* (blog), October 10.
http://bits.blogs.nytimes.com/2012/10/10/the-global-arbitrage-of-online-work/?_php=true&_type=blogs&_r=0.
- Hester, Vaughn, Aaron Shaw, and Lukas Biewald. 2010. "Scalable Crisis Relief: Crowdsourced SMS Translation and Categorization with Mission 4636." Proceedings of the first Association for Computing Machinery Symposium on Computing for Development, Article Number 15, December 27.
- Horton, John. 2011. "The Condition of the Turking Class: Are Online Employers Fair and Honest?" *Economics Letters* (111) 1: 10–12.
- . 2012. "High Wage Skills on oDesk (or Why You Might Want to Learn Clojure if You're Not a Lawyer)," *Online Labor* (blog). February 18. <http://onlinelabor.blogspot.com/2012/02/high-wage-skills-on-odesk-or-why-you.html>.
- IDC. 2013. *Worldwide Big Data Technology and Services 2013–2017 Forecast*. Framingham, MA: IDC.
- IEA and FES (Institute of Economic Affairs and Friedrich-Ebert-Stiftung). 2010. *Youth Fact Book: Infinite Possibility or Definite Disaster?* Nairobi: IAE and FES.
- i-Graduate and Education UK. 2009. *Starting Your Career in Nigeria*. IGI Services.
http://www.ed.ac.uk/polopoly_fs/1.26415!/fileManager/nases_nigeria_country_guide.pdf.
- ILO. 2010. *Global Employment Trends for Youth 2010*. Geneva: International Labour Organization.
- . 2013. *Global Employment Trends for Youth 2013*. Geneva: International Labour Organization.
- India, Ministry of Power. 2014. "Rajiv Gandhi Grameen Vidyutikaran Yojana at a Glance."
http://rggvv.gov.in/rggvv/rggvvportal/rggvv_glance.html.
- Ipeirotis, Panos. 2010a. "Analyzing the Amazon Mechanical Turk Marketplace." *Association for Computing Machinery XRDS* (17) 2: 16-21.

- . 2010b. *Demographics of Mechanical Turk. Working Paper*. NYU Working Paper No. CEDER-10-01. <http://ssrn.com/abstract=1585030>.
- Ipeirotis, Panos, and John Joseph Horton. 2012. "Visualizations of the oDesk 'oEconomy:' Exploring Our World of Work." July 2. <https://www.odesk.com/blog/2012/07/visualizations-of-odesk-economy/>.
- James, Nathan. 2014. *Offender Reentry: Correctional Statistics, Reintegration into the Community, and Recidivism*. Washington, DC: Congressional Research Service.
- Karpie, Andrew. 2013. "oDesk Reports 2012 Gross Services Revenues of \$360M; 60% Year-Over-Year Growth in Hours Worked/Billed." *Staffing Industry Analysts: Andrew Karpie's blog*. January 29. <http://www.staffingindustry.com/site/content/view/full/98486>.
- Karpie, Andrew, and John Nurthen. 2014. *2014 Online Staffing Platform Landscape: Can More be Better?* Staffing Industry Analysts. <http://www.staffingindustry.com/eng/Research-Publications/Research-Topics/North-America/2014-Online-Staffing-Platform-Landscape-Can-more-be-better>.
- Khanna, Shashank, Aishwarya Ratan, James Davis, and William Thies. 2010. "Evaluating and Improving the Usability of Mechanical Turk for Low-Income Workers in India." Proceedings of the first Association for Computing Machinery Symposium on Computing for Development, Article Number 12.
- Kumar, Nagesh, and K.J. Joseph. 2005. "Export of Software and Business Process Outsourcing from Developing Countries: Lessons from the Indian Experience." *Asia-Pacific Trade and Investment Review* (1) 1: 91-110.
- Lehdonvirta, Vili, and Mirko Ernkvist. 2011. *Converting the Virtual Economy into Development Potential: Knowledge Map of the Virtual Economy*. Washington DC: infoDev/World Bank.
- Mahapatra, Lisa. 2013. "Educated And Unemployed: Unemployment Rate For Recent College Grads Higher Than That Of High School Grads." *International Business Times*, June 26. <http://www.ibtimes.com/educated-unemployed-unemployment-rate-recent-college-grads-higher-high-school-grads-1324431>.
- Malone, Thomas, W., and Robert, L. Laubacher. 1998. "The Dawn of the E-Lance Economy." *Harvard Business Review*. September/October: 145-152. <https://hbr.org/1998/09/the-dawn-of-the-e-lance-economy>.
- Martin, David, Benjamin Hanrahan, Jacki O'Neill, and Neha Gupta. 2014. "Being a Turker." *CSCW. Proceedings of the 17th Association of Computing Machinery Conference on Computer Supported Cooperative Work and Social Computing*, Baltimore, USA. <http://dl.acm.org/citation.cfm?id=2531602>.
- Mehra, Arjun and Shreya Roy. 2014. "IT companies offer up to 50% higher salaries to design students than engineering graduates." *The Economic Times*. February 28. http://articles.economictimes.indiatimes.com/2014-02-28/news/47774460_1_4-lakh-design-students-engineering-students.
- Munro, Robert. 2013. "Crowdsourcing and the Crisis-Affected Community: Lessons Learned and Looking Forward from Mission 4636." *Journal of Information Retrieval* (16) 2: 210-266.
- NASSCOM. 2008. *Assessment of Competence*. New Delhi: NASSCOM.
- . 2009. *Perspective 2020: Transform Business, Transform India*. New Delhi: NASSCOM.
- . 2013. *The IT-BPM Sector in Strategic Review*. New Delhi: NASSCOM.
- oDesk. 2013a. *Millennials and the future of work*. oDesk and Millennial Branding.
- . 2013b. "Fastest-Growing Skills in the oEconomy: Bright Spots that Represent Job Opportunities." *oDesk Blog*, April 8. <https://www.odesk.com/blog/2013/04/fastest-growing-skills-in-the-economy-bright-spots-that-represent-job-opportunities/>.

- . 2013c. "The Rise of Specialists Online: Growing Opportunity for a Long Tail of Skills." *oDesk Blog*, August 5. Accessed 2014. <https://www.odesk.com/blog/2013/08/1billion-odeskskillslongtail/>. OECD. 2012. *Education at a Glance*. Paris: OECD.
- Office of the Prime Minister, Kenya. 2012. *Re-alignment of Salary Structure for Civil Service*. Nairobi: Ministry of State for Public Service.
- PricewaterhouseCoopers. 2005. *The Evolution of BPO in India*. PwC. http://www.pwc.in/en_IN/in/assets/pdfs/evolution-of-bpo-in-india.pdf.
- Research ICT Africa. 2014. *Is Broadband Data Worth the Money*. Research ICT Africa. http://www.researchictafrica.net/publications/Research_ICT_Africa_Policy_Briefs/RIA_Policy_Brief_June_2014_No_3_Broadband.pdf.
- Rogers, Everett. 2010. *Diffusion of Innovations*. New York: Simon & Schuster.
- Ross, Joel, Lilly Irani, M. Six Silberman, Andrew Zaldivar, and Bill Tomlinson. 2010. "Who are the Crowdworkers? Shifting Demographics in Mechanical Turk." Paper presented at ACM Conference on Human Factors in Computing Systems, April 10-15, Atlanta, GA. <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=B496D21FD15C84E81F1746CEA516017C?doi=10.1.1.187.8270&rep=rep1&type=pdf>.
- Samasource. 2013a. *Poverty is a Global Issue*. June. <http://www.samasource.org/wp-content/uploads/2015/01/2013-Q1-Impact-Dashboard.pdf>.
- . 2013b. "Fighting Poverty with Formal Work." *2013 Q2 Impact Report*. Samasource. <http://www.samasource.org/wp-content/uploads/2014/08/2013-Q2-Report.pdf>.
- . 2013c. *2013 Q3 Impact Dashboard*. <http://www.samasource.org/wp-content/uploads/2014/08/2013-Q3-Impact-Dashboard.pdf>.
- Shapiro, Danielle, N., Jesse Chandler, and Pam, A Mueller. 2013. "Using Mechanical Turk to Study Clinical Populations." *Clinical Psychological Science* (1) 2: 213-220.
- Staffing Industry Analysts. 2013. "Online staffing global revenue \$2 billion in 2014." Daily News. April 10. <http://www.staffingindustry.com/site/Research-Publications/Daily-News/Online-staffing-global-revenue-2-billion-in-2014-25309>.
- . 2014. "World - Online Staffing Revenue Could Reach \$46 Billion." Daily News. January 6. <http://www.staffingindustry.com/site/Research-Publications/Daily-News/World-Online-staffing-revenue-could-reach-46-billion-28527>.
- Sudan, Randeep, Seth Ayers, and Philippe Dongier. 2010. *The Global Opportunity in IT-Based Services*. Washington DC: infoDev and World Bank.
- TeamAsia. 2013. "Online Freelance Platform Elance Sees Strong Growth in the Philippines." Client News. <http://www.teamasia.com/newsroom/read-client-news.aspx?id=448:online-freelance-platform-elance-sees-strong-growth-in-the-philippines>.
- The Founder Magazine. 2012. http://www.gemag.com.cn/8/29518_1.html.
- UN DESA. 2012. *UN World Youth Report 2011*. New York: United Nations. <http://unworldyouthreport.org>.
- UNDP. 2013. "Kenya's Youth Unemployment Challenge." Discussion Paper, New York: UNDP.
- UNESCO. 2014. *Gross Graduation Ratio*. Accessed 2014. <http://data.uis.unesco.org/index.aspx?queryid=161&lang=>.
- UNESCO Institute for Statistics. 2014. *Data Centre*. Accessed 2014. <http://www.uis.unesco.org/DataCentre/Pages/default.aspx>.
- World Bank. 2012a. *Feasibility Study: Microwork for the Palestinian Territories*. Washington, DC: World Bank.
- . 2012b. *Information and Communications for Development 2012: Maximizing Mobile*. Washington, DC: World Bank.
- . 2014. *World Bank Data*. Accessed 2014. <http://data.worldbank.org/>.