Global online labour markets are connecting firms with remote workers, but it remains difficult for people to get their first job. Research by **Christopher Stanton** and **Catherine Thomas** reveals how new types of intermediaries enable inexperienced workers to signal their quality to potential employers.

Online hiring of offshore workers: the value of intermediaries

A variety of online markets have developed in recent years to facilitate trade in labour services. Upwork – previously known as oDesk-eLance* – is the largest global online market for outsourced work, with revenues of around $1 billion a year, making it the 'behemoth of the human cloud' (O'Connor, 2015). One key feature of the company is that over 80% of the transactions it processes are across national borders and hence constitute offshoring or international trade in labour services (Horton, 2010).

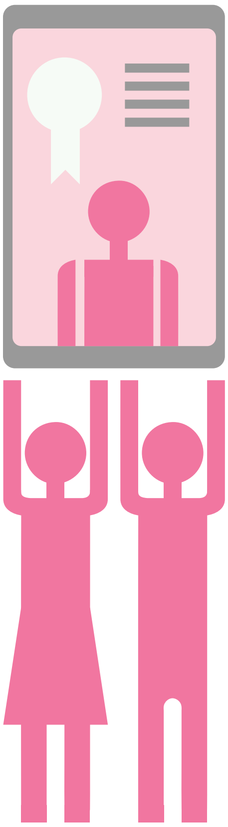
Upwork and similar marketplaces bring together employers, who mainly offer short-term jobs or tasks, and workers, who are paid by the hour. But while these markets provide a huge amount of information about potential trading partners, our research shows that 'information frictions' still hamper the growth of global outsourcing. We also find, however, that new types of organisations – 'agencies' – have sprung up to reduce information-related barriers to trade, notably the uncertainty about workers without verifiable prior experience in the marketplace.

Online labour markets

Employers and workers can find each other easily on Upwork: workers' profiles include short biographies, details of their education, skills and experience, scores received in online tests and feedback from past performance. And as in online product markets such as Amazon or eBay, buyers – or, in this case, employers – leave feedback after completed jobs.

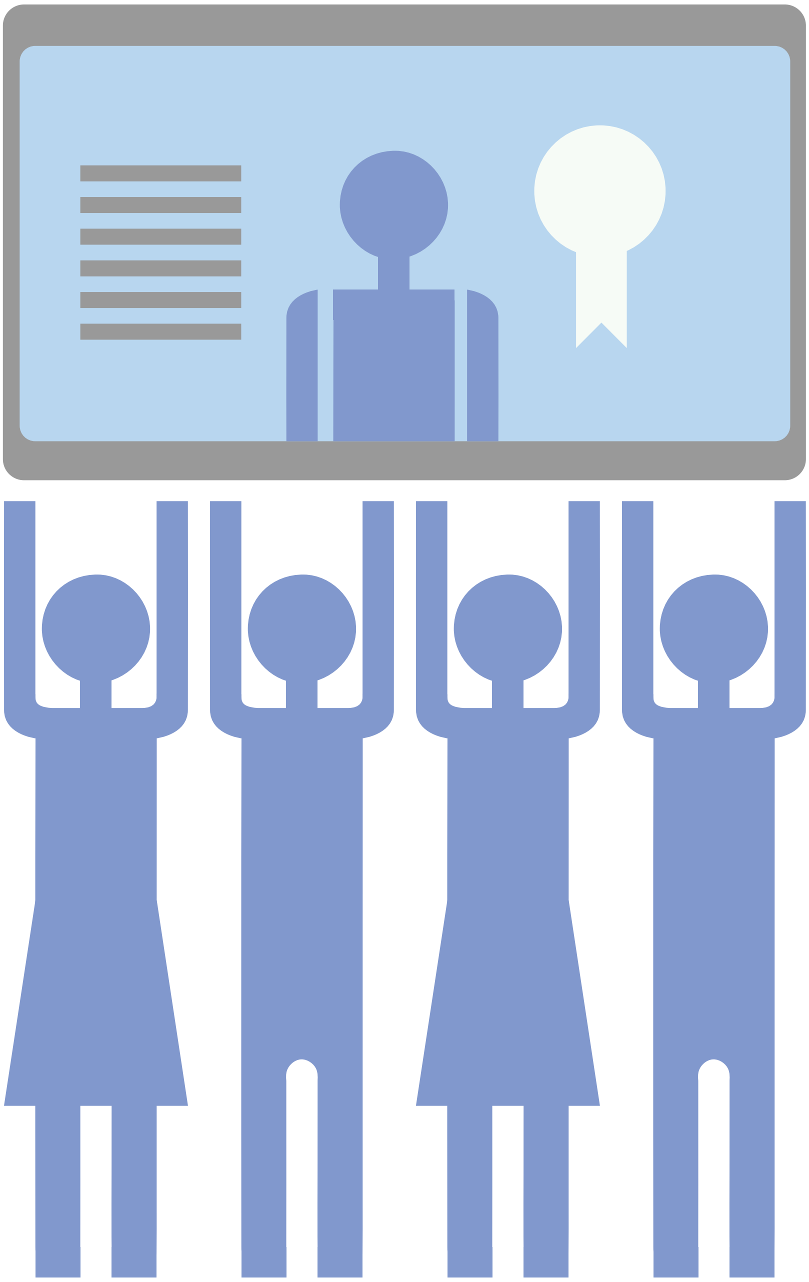
The feedback scores and comments that are visible on workers' profiles are highly positively correlated with their likelihood of future employment and wages earned. They are a form of high bandwidth data (Autor, 2001a) that are imperfectly correlated with other observable worker characteristics.

But by definition, new workers on the website – those without previous experience – have no observable



* oDesk was founded in 2005 and merged with eLance in 2014

Being a member of an agency is a signal of quality for inexperienced workers



feedback on their profiles. Detailed administrative data on job postings, applications, hiring decisions and job outcomes show that finding the first job is particularly hard. Indeed, of those new workers who applied for their first job on the website between August 2008 and December 2009, only 10% were eventually hired; in contrast, after being hired once, 70% find a second job.

This large difference between hiring rates for workers with and without feedback on their profiles suggests that a feedback score and some experience gives workers a foot in the door. Indeed, in an experiment with oDesk, Pallais (2014) finds that randomised workers treated with feedback scores go on to have better outcomes than control workers.

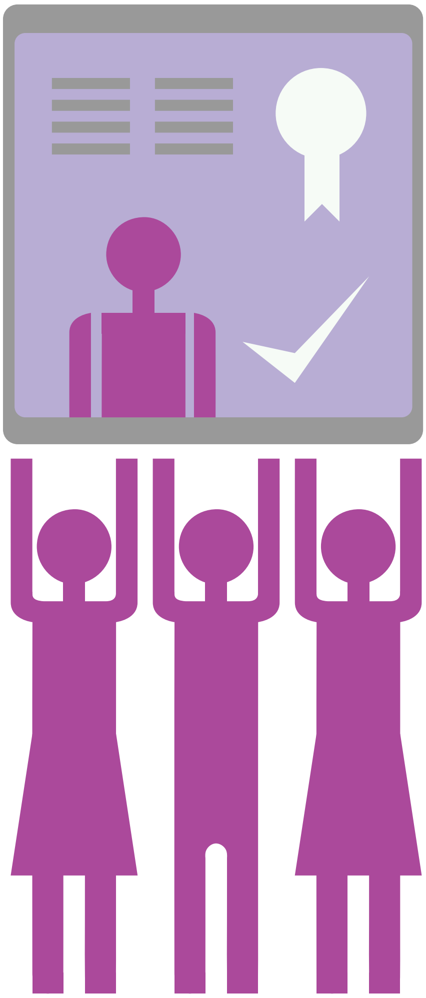
But while the first job is extremely valuable for workers, their first employers do not receive the future benefits of revealing information about workers that come from their increased likelihood of finding future jobs since these are likely to be with different employers. Analysis by Tervio (2009) provides insight into such markets in which talent is revealed on the job: in these cases, because the first employer does not capture the full returns from talent discovery, they hire an inefficiently low number of inexperienced workers.

The inability to capture the long-term value of investment in information is similar to the reason why firms may be reluctant to invest in providing general skills training (Becker, 1962) unless they have monopsony power or private information that allows them to capture the returns (Acemoglu and Pischke, 1998; 1999).

The benefits of agency affiliation

A new type of market intermediary helps to solve the problem. Of all workers hired at least once on Upwork, 27% are affiliated with one of the 1,000 or so small autonomous 'agencies' that exist within this marketplace.

Agencies are typically groups of around three to ten workers with similar skills and backgrounds. They are independent of Upwork, but the website accommodates their presence by allowing



Agency affiliation is especially important in technical work where worker quality is unknown until the job is done

common agency members to reveal their affiliation on their profile page and to display the pooled feedback scores of all current and past agency members. Employers can observe these agency-level feedback scores, even for new agency members who have yet to be employed on the website and have not earned any individual feedback scores.

Agency affiliation has a limited effect on the average probability of being hired across all workers. But among inexperienced workers, it is tremendously important in determining hiring outcomes. Controlling for all other observable differences in workers' characteristics, a new agency affiliate is 75% more likely to be hired than a new non-affiliated worker – despite the fact that affiliates request and earn higher hourly wages on their first job.

This early advantage matters for overall career outcomes: between August 2008 and August 2010, the average affiliate earned over four times as much as the average non-affiliate. Most of the difference in career outcomes between affiliates and non-affiliates can be attributed to the fact that a larger share of non-affiliates is never hired. Once individuals are hired for their first job, their on-the-job feedback scores are much more important to future success than their affiliation status.

This explains why agency affiliation appears irrelevant to hiring decisions among all workers. The probability of being re-hired is greater for affiliates because they receive better individual feedback scores on early jobs; but when non-affiliates are re-hired, their wages catch up with affiliates' wages. Among workers who have had five or more jobs on the website, wages and hiring probabilities are very similar for affiliates and non-affiliates with the same individual feedback scores – and so future career outcomes become indistinguishable.

Overall, these findings suggest that agencies are able to screen workers' quality and offer affiliation only to high quality inexperienced workers. For those new workers that are not affiliated with an agency, quality revelation on the job allows employers to screen out those that are low quality only after they have been hired, and only those high quality non-affiliates who are fortunate to be hired go on to future success.

In contrast, agency affiliation pre-empts on-the-job quality revelation for affiliates. Being a member of an agency is a signal of worker quality for inexperienced workers – a signal that substitutes for an earned individual feedback score and becomes redundant once affiliates have earned their own feedback. Since affiliates' feedback is almost always positive, affiliation is a credible signal of worker quality.

The implication that agency affiliation signals inexperienced worker quality is supported by the fact that agencies are much more prevalent when quality is particularly hard to discern from other observable worker characteristics. For example, affiliates are concentrated in technical job categories, such as programming, where worker quality remains unknown until after the job is done. Furthermore, agencies are concentrated outside the relatively familiar labour markets of the United States, where the majority of employers are located.

Offline and local social ties help to increase the value of online global labour markets

How agencies work

Since our research finds limited evidence of any other way that agencies create value in this market, we investigate how agencies work. How can agencies screen worker quality when potential employers cannot? The data suggest that it is often because workers in an agency know each other offline. Agency members tend to be from the same city or even from the same university. So we hypothesise that the ability to screen affiliate quality is due to existing knowledge in offline communities.

A conservative estimate suggests that the presence of agencies in the market increases the efficiency with which workers are allocated to jobs in the overall market by around 11%. But what's in it for the agency head? Upwork comments that these individuals typically retain some share of affiliates' revenues on the website.

Affiliates tend to prefer to remain in an agency, even if that means sharing their revenues throughout their careers. This is because the website further accommodates agencies by tying the affiliate's online profile to an agency for the duration of that worker's career. Workers who leave their agencies are unlikely to be able to retain their individual feedback scores, rendering them observationally equivalent to inexperienced workers in the marketplace.

Under this business model, agency heads are able to sustain long-term contracts with workers, overcoming the problem that no employer has an incentive to invest in quality revelation in a world of short-term contracts between employers and employees. At the same time, the fact that agency-level feedback is public dissuades an agency head from offering affiliation to a low quality worker. This is what gives credibility to the signal that affiliates are high quality.

These findings imply that the type of social ties that are known to be important in traditional labour markets – such as referrals through 'old boy networks' (Saloner, 1985) – continue to matter in the new global labour markets. Agencies play a role that is similar to that performed by experts in a study by Biglaiser (1993), by certification intermediaries in work by Lizzeri (1999) and by the temporary-help supply firms discussed in Autor (2001b). But in contrast to these organisations, agencies do not require any costly additional screening or self-selection (Spence, 1973).

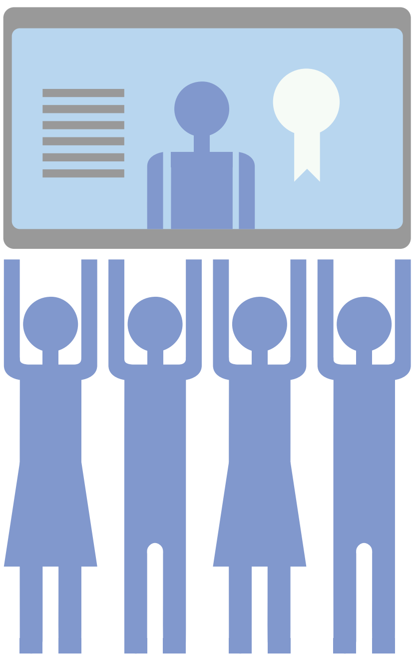
Will agencies fully solve the problem of missing information about inexperienced worker quality? This is an unlikely outcome because an agency's boundaries are determined by the size of the agency head's offline network, which is necessarily localised and limited in size. At the same time, a new agency relies on previously non-affiliated workers with good feedback being able to recruit and brand new affiliates from their offline networks. The supply of potential new agency heads is therefore limited due to the very problem that agencies exist to address.

While new global and fragmented production processes have the potential to revolutionise how work is done, some aspects of traditional labour markets remain important. Our research shows that rather than being rendered obsolete by recent developments in communications technology, offline and local social ties can serve to increase the value of online global labour markets.

This article summarises 'Landing the First Job: The Value of Intermediaries in Online Hiring' by Christopher Stanton and Catherine Thomas, CEP Discussion Paper No. 1316 (http://cep.lse.ac.uk/pubs/download/dp1316.pdf) and forthcoming in the *Review of Economic Studies*.

Christopher Stanton is at Harvard Business School. **Catherine Thomas** is in LSE's department of management. They are research associates in CEP's growth and globalisation programmes, respectively.

'Old boy networks' have not been rendered obsolete by modern communications technology



Further reading

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