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eLancing: A review and research agenda for bridging the science–practice gap☆

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ABSTRACT

eLancing, or Internet freelancing, is spreading at an incredibly fast pace worldwide. The eLancing work environment is called a "marketplace," which is a website where individuals interested in being hired and employers looking for individuals to perform some type of work meet. eLancing allows individuals from literally anywhere in the world to sign up and complete work using the Internet for an employer who literally can also be anywhere in the world. eLancing boasts millions of users and billions of dollars in transactions and it involves fundamental changes in the nature of work and in the employer–worker relationship. We discuss eLancing and challenges and opportunities it creates for human resource management (HRM) research and practice. Also, we offer a research agenda with the goal of understanding eLancing and its effects, particularly pertaining to the core HRM areas of job design and analysis, workforce planning, recruitment, selection, training and development, performance management, compensation, and legal issues. Given the increased importance of eLancing worldwide and its implications for worldwide work arrangements in the 21st century's international society, results of such scholarly research have the potential to help narrow the science–practice gap and also elevate the status, perceived value-added, and organizational and societal influence of HRM and related fields.

1. Introduction

The present article is about Internet freelancing or *eLancing* (Aguinis & Lawal, 2012). The eLancing work environment is called a "marketplace," which is a website where individuals interested in being hired and employers looking for individuals to perform some type of work meet. Thus, in eLancing individuals from literally anywhere in the world can sign up and complete work using the Internet for an employer who literally can also be anywhere in the world. Examples of eLancing marketplaces include eLance.com, freeLancer.com, guru.com, Amazon Mechanical Turk (mturk.com), oDesk.com, and microworkers.com, among many others. A *potential employer* may be a large corporation, a small firm, a consulting company, or any type of client organization in any industry in need of having some type of work performed. A *potential employee or worker* may be an individual or a group of individuals, including a small or medium-size business, interested in being hired by a potential employer to perform a certain type of work.

Human resource management (HRM) scholars should study eLancing because it boasts millions of users and billions of dollars in transactions. The explosive growth of eLancing can be understood by considering several important factors that are changing the nature of work in the 21st century (Cascio & Aguinis, 2008b, 2011). First, communication technology and, in particular, the Internet enable the ubiquity of the workplace in that the workplace becomes, or can easily become, one's current location. Second,

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changes in the demographic profile of the average employee such as the increasing number of women in the workforce and an aging population are placing pressure on organizations to adopt work–life balance practices that allow employees flexibility to accomplish their personal and professional goals (Rapoport, Bailyn, Fletcher, & Pruitt, 2002). Third, the proliferation of technology to developing countries and the disparity between currency exchange rates continue to create an opportunity for creating connections between employers in developed countries and skilled employees in developing countries. Fourth, there are documented growing gaps in the available skilled workforce in the United States (U.S.) and other developed countries. For example, the number of skilled workers ages 35 to 44 in the U.S. is predicted to decline by 2.8 million by the year 2014, which will create an important talent gap (Fox, 2010). Specific to particular fields, by the year 2015 the U.S. is predicted to have a shortage of graduates in science, technology, engineering, and math given that 440,000 will be needed but only 225,000 will be available (Fox, 2010). Taken together, these changes have led to a number of alternatives to the traditional localized employer–worker relationship and 9-to-5 work arrangement (Belcourt, 2006; Colakoglu, Lepak, & Honga, 2006; Hertel, Geisterb, & Konradt, 2005; Strohmeier, 2007). eLancing is the newest of such new alternatives and it is changing the nature of work worldwide.

In spite of the popularity of eLancing, human resource management (HRM) scholars are largely silent about this worldwide phenomenon. It is ironic that a scholarly field dedicated to studying how work organizations can perform more effectively by better management of their human resources and how to enhance individual well being in work settings does not seem to be noticing eLancing. It is possible that the lack of scholarly attention to this topic is due, at least in part, to the widely documented research–practice gap in HRM and related fields (e.g., Cascio & Aguinis, 2008a; Deadrick & Gibson; 2007; García-Izquierdo, Aguinis, & Ramos-Villagrasa, 2010; Rynes, 2007; Rynes, Giluk, & Brown, 2007). Regardless of the reason, the lack of attention to eLancing on the part of scholars in HRM, organizational behavior (OB), and industrial and organizational (I/O) psychology is something we believe needs to be addressed. As noted earlier, eLancing is becoming a powerful economic phenomenon worldwide. In addition, eLancing, due to its unique type of work arrangement, has the potential to change employment relationships in the 21st century's international society. eLancing is still in a fairly nascent stage, so the timing is just right and there is a unique opportunity for HRM, OB, and I/O psychology scholars to study a topic that is of great organizational and societal importance. Making a contribution to our knowledge of eLancing and its effects has the potential to help elevate the status, perceived value-added, and influence of HRM in organizations and society, which have been elusive goals since the very inception of the discipline (Aguinis, Michaelis, & Jones, 2005).

The main goals of our article are to introduce scholars in HRM, OB, I/O psychology, and related fields to eLancing and to set a research agenda for investigating this topic. eLancing is rapidly and drastically creating fundamental changes in the nature of work, in how people experience work, and in the employer–worker relationship. These changes, in turn, lead to important challenges for HRM research and practice because long-established theories may need to be modified, new theories may need to be produced and, as a result, HRM practices also may need to be revisited to accommodate the new eLancing work environment. It is our hope that scholars in HRM and related fields will take the lead in generating empirical work and new theories regarding eLancing that will influence the world of work in a meaningful and positive way. As such, eLancing offers a unique opportunity for scholars to produce research that has the potential to be valuable for practitioners and society (Cascio & Aguinis, 2008a; García-Izquierdo et al., 2010).

The remainder of the article is organized as follows. First, we discuss some key differences between eLancing and other types of alternative work arrangements and organizational forms including outsourcing and offshoring, temporary work, teleworking, and independent contracting. Second, we describe illustrative types of eLancing marketplaces including microtask, survey, business function, and information technology. Finally, we select key HRM areas and discuss specific differences regarding traditional work and eLancing and how these differences lead to important research questions that, considered together, constitute a research agenda for the future. Our selected areas include job design and analysis, workforce planning, recruitment, selection, training and development, performance management, compensation, and legal issues.

2. Differences between eLancing and other alternative work arrangements and organizational forms

The technological and demographic issues described earlier have led to several different types of work arrangements and organizational forms. Thus, it is important to highlight some key differences between eLancing and outsourcing and offshoring, temporary work, teleworking, and independent contracting. A description of these key differences also serves the purpose of highlighting the unique characteristics of eLancing.

2.1. eLancing is different from outsourcing and offshoring

eLancing differs from outsourcing in that in true outsourcing there is no online marketplace between the employer/client and employee/supplier. In typical outsourcing scenarios there may be an external organization that searches for possible employees/suppliers and matches employers/clients and employees/suppliers (Belcourt, 2006). This matching process is quite different in eLancing, where the online marketplace plays a central, broader, and unique role. While it may seem that the online marketplace may serve as a substitute for the external organization in charge of matching employers and employees, the online marketplace offers more than just a matching role. First, an important difference between outsourcing and eLancing is that the magnitude of options offered by online marketplaces cannot be matched by an external organization responsible for the employer–employee matching process. Related to this point, a second difference is that although eLancing covers a much wider breadth of functions, employees in eLancing do not typically perform an entire major function or complete an entire process for employers. Many

eLancing employees, for example, design logos, perform data entry, or conduct specific product market research. In contrast, outsourcing involves contracting out a major function, activity, or process to another organization (Belcourt, 2006). A third difference between outsourcing and eLancing is that, in contrast to online marketplaces, external organizations do not manage the entire employer–employee relationship from entry to exit including hiring, quality control, and measurement of performance output. Finally, the amount of compensation required by the external organization is much higher than any online marketplace in existence.

Offshoring is essentially similar to outsourcing with the only difference being that offshoring requires that outsourcing be sent to another country (Burke & Ng, 2006). Accordingly, each of the differences between eLancing and outsourcing described earlier also apply to the relationship between eLancing and offshoring. One additional difference between eLancing and offshoring is that eLancing employees may reside in the same country as the employer. However, due to the nature of eLancing, employees may not actually know the country where their employer resides and, similarly, employers may not know the country where their employees reside.

2.2. eLancing is different from temporary work

eLancing also differs from temporary work. For example, temporary workers may be assigned to work in the physical location of their employers, and it is rare to allow them to do their work from anywhere in the world (Foote & Folta, 2002). Also, temporary workers usually find employment through a third party (i.e., temporary service agency) and this third party is no longer involved in the employee–employer transaction once the temporary worker is hired. In contrast, as noted earlier, online marketplaces play an important role in the entire employer–employee relationship from entry to exit including hiring, quality control, and measurement of performance output. Another difference between temporary work and eLancing is that while many temporary workers are employed as clerical workers or in light manufacturing jobs, eLancing employees perform a broader range of jobs and are more likely to work on tasks that are not clerical or light manufacturing in nature (Foote & Folta, 2002).

2.3. eLancing is different from teleworking

Teleworking is defined as working from a different physical location and communicating using telecommunications or computer-based technology (Bailey & Kurland, 2002). An important difference between teleworking and eLancing is that while teleworking is reserved for employees who share the traditional relationship with their employer in that they usually work for one company, eLancing employees do not work full-time or exclusively for one company but, instead, they work for as many companies at one time as they see fit. In addition, consider the four basic dimensions proposed by Feldman and Gainey (1997) to study teleworking: (1) how often the employee teleworks, (2) whether the work has fixed hours or a flexible schedule, (3) whether an employee teleworks from home or from a satellite station set up by their company, and (4) whether the company asked the employee to telework or if it was the employee's own initiative. The fact that these four dimensions are not very useful to the study of eLancing and the online marketplaces that connect employers with employees is an indication of differences between teleworking and eLancing. For example, eLancing employees telework 100% of their time so this dimension would have a variance of zero and, hence, would not be correlated with any other variable. Also, eLancing employees do not report the specific hours that they work for a specific employer and they do not negotiate the particular teleworking arrangement.

2.4. eLancing is different from independent contracting

Independent contractors are defined as self-employed individuals who contract or sell their services to a client organization on a fixed term or project basis (Gallagher, 2002). Although it may seem that eLancing and independent contracting involve the same type of work arrangement and relationship, they do not. The key difference is that eLancing is not just about the relationship between employer and employee, but it also involves a third party – the eLancing marketplace – that is omnipresent from the beginning to the end of the eLancing transaction. In eLancing, it is not just the individual who is selling her knowledge, skills, and abilities, but the marketplace plays a key role in matching employer with employee, assigning work, reviewing performance, and allocating rewards. This is why the marketplace keeps a portion of the profits.

Next, to provide a more in-depth description of eLancing and further highlight differences between eLancing and other types of work arrangements and organizational forms, we discuss eLancing marketplaces.

3. eLancing marketplaces

The creation of eLancing marketplaces has been predicted since the advent of the Internet (Malone & Laubacher, 1998; Townsend, DeMarie, & Hendrickson, 1998). These marketplaces are websites created specifically to allow potential employers and potential workers to meet. Specifically, these websites are designed to handle the entire process of recruitment, selection, training, project oversight, performance feedback, and compensation. Today's marketplaces are so sophisticated that they have gone well beyond the earliest descriptions of eLancing's potential (e.g., Malone & Laubacher, 1998).

Although eLancing marketplaces differ in some respects, they all have an open registration policy and are free for any potential employer to sign up. While such a policy may seem to detract from the quality and seriousness of potential employers, each website has a number of checks in place to minimize possible problems. For example, these checks include the use of certification

tests to qualify potential employers, feedback created by individuals who worked on projects for each particular employer in the past, and ratings comparing potential employers against each other to aid potential workers in the selection process. Another common characteristic is that all marketplaces are designed with both potential employers and workers in mind. Many of the latest features implemented by eLancing marketplaces attempt to meet the needs of their two types of clients (a) potential employers seeking individuals to perform work, and (b) potential workers seeking work. To be successful, a marketplace must provide good service to potential employers and also to potential employees.

There are many popular marketplaces including ELance.com, FreeLancer.com, Guru.com, oDesk.com, Rentacoder.com, Amazon Mechanical Turk, Microworkers.com, and e-rewards.com. We classify these marketplaces, based on their function, according to the following categories: (1) microtask, (2) survey, (3) business function, and (4) information technology. Table 1 includes a summary description of eight popular marketplaces.

Table 1 shows that many of the marketplaces originated in high-technology entrepreneurial hubs such as Silicon Valley. All of the marketplaces included in Table 1 have a free sign-up process for suppliers with the exception of e-rewards, which has an invite-only process. In addition, many of the websites offer a premium service where both potential employers and employees can pay a monthly fee for premium services such as the ability to post tasks or projects in a highly visible position on the website or gain privileged access to tasks or projects. Most of the marketplaces included in Table 1 were created between 1995 and 2009 and, while entrepreneurs founded most, some of these companies are spin-offs from larger corporate ventures such as Amazon Mechanical Turk by Amazon and e-rewards by Brierley and Partners.

The revenue model for many of the marketplaces is to take a commission of the profit directly from the employee. The percentage of commission varies, but it ranges from 5% to 15%. Microtask marketplaces are the only type of marketplace that require employers to pay for service directly. All other marketplaces act as escrow providers between the transactional parties and remove their commission from the employees' pay before transferring the funds. Next, we provide a more detailed description of each major type of marketplace.

3.1. Microtask marketplaces

The information technology company Amazon created the microtask marketplace in 2004 by launching Amazon Mechanical Turk (www.mturk.com). Amazon Mechanical Turk (AMT) is a website that allows potential employers ranging from individuals to small and large firms to seek workers to perform batches of very small tasks. The label "microtask" is due to the small-task nature of the type of work performed. This type of marketplace was invented by Amazon.com to solve a problem they were having with duplicate items posted on its web pages. For example, the same book was listed under two different names or international standard book numbers (ISBN). This need quickly allowed other companies the ability to harness the idea and create other microtask marketplaces. The tasks, which are also know as human intelligence tasks (HITs) are simple in nature but require human intelligence and cannot be handled effectively by existing automated information technology. For example, one task may consist of a simple survey question such as "Do you find this image offensive?" (with a corresponding image) or may require an individual to transcribe a recording. The workers or "turkers" in the system are the people around the world who perform the HITs and the "requesters" are employers who require work to be done. The name Mechanical Turk was derived from the "Mechanical Turk" or "Automaton Chess Player," which was a fake chess-playing machine constructed in the late 18th century. This machine apparently was able to play a strong game of chess against a human opponent. However, in actuality, this was not a

Table 1
Summary description of illustrative eLancing marketplaces.

Site name	Marketplace category	Year founded	Rating system	Certification system	Compensation modality	Sign up security?
eLance.com	Business function	1998	Ranking algorithm	Justifacts/testing	Checking to escrow/PayPal	None
FreeLancer.com	Business function	2002	Feedback	Exams	Checking/PayPal	None
Guru.com	Business function	1998	Patent-pending algorithm	Skills test center	Checking/PayPal	None
oDesk.com	Information technology	2004	Workplace/ Feedback	Skills testing	PayPal/checking	None
Rentacoder.com	Information technology	2001	Coder Rating Scale	ExpertRating certification	escrow account/PayPal	None
Amazon Mechanical Turk (mturk.com)	Microtasks	2005	Double check	Qualifications	Amazon Payments	None
Microworkers.com	Microtasks	2009	N/A	N/A	Checking/PayPal	None
e-rewards.com	Survey	1998	N/A	Pre-screening	Redeem for prizes through a number of participating sites	Invite only

Note. Rating system: the specific system or method used by the marketplace to compare eLancers to one another. Certification system: the specific system or method that the marketplace uses to verify credential information provided by eLancers. Compensation modality: the reward system used by the marketplace to provide currency to the eLancers for their services. Sign up security: the systems that the marketplaces have in place to filter users that are allowed bid on projects/tasks.

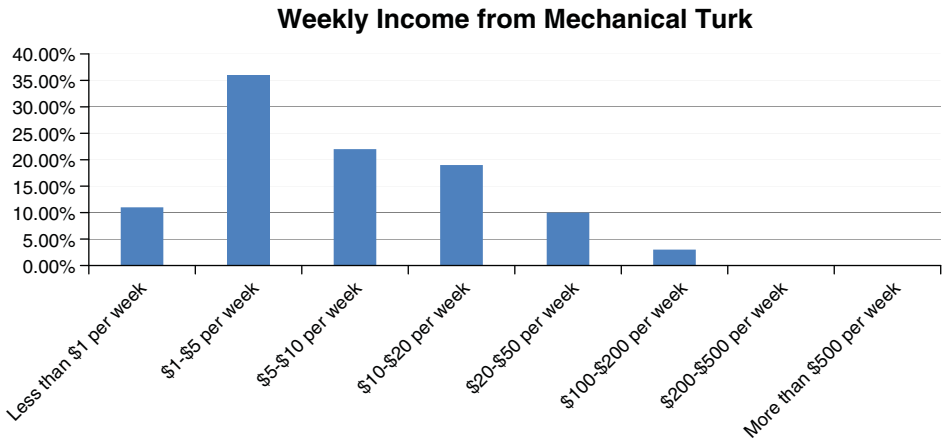

Fig. 1. Retrieved August 12, 2010 from http://behind-the-enemy-lines.blogspot.com/2010/03/new-demographics-of-mechanical-turk.html. Data based on a February 2010 survey of 1000 turkers by Ipeirotis (2010).

chess-playing machine and, instead, it was a mechanical illusion based on a human chess master who was hiding inside to operate the machine. Much like the 18th-century Mechanical Turk, the 21st-century Amazon Mechanical Turk seems to magically perform human intelligence tasks whereas these tasks are not performed by a machine but by actual people (i.e., eLancers) from all over the world.

The system is designed so that employers can review the performance on a task and leave feedback for other employers and workers to view. Task performance is also one of the "qualifications" that employers can specify when submitting tasks to Mechanical Turk. This system of qualifications allows only workers who meet specific criteria to view and bid on the tasks posted by requesters. Examples of types of qualifications include percentage of satisfactory HITs performed in the past, and whether or not the turker is old enough to view specific content.

Mechanical Turk differs slightly from other marketplaces in how it implements its compensation systems. The simple nature of the tasks results in a lower average payment than other marketplaces and less than 1% of the tasks pay more than five dollars per task. As shown in Fig. 1, about 70% of all workers receive only between $1 and $20 per week. Given this overall low pay and the simplicity of the tasks, the assumption may be that most workers are from developing and populous countries such as China or India where there is abundant labor supply. However, this is an erroneous assumption because approximately 47% of the workers are from the United States (Ipeirotis, 2010). In addition, among U.S. workers, more than 60% of turkers are women, about 45% are 29 years old or younger, and the more than 50% have at least some college education. Moreover, as shown in Fig. 2, more than 20% of turkers have an annual household income of between $40,000 and $60,000, and more than 50% of turkers have an annual household income of at least $40,000 (Ipeirotis, 2010). Given a median household income in the U.S. of $50,233 for 2007 (U.S. Census Bureau, 2008), these figures suggest that microtasking is not at all a phenomenon relegated to the poorest and least educated segments of the world's population.

Mechanical Turk differs slightly from other marketplaces in that it transfers funds directly from employers to workers, which makes employers liable for any tax regulations for paying workers. There is typically a 10% commission fee on tasks posted on

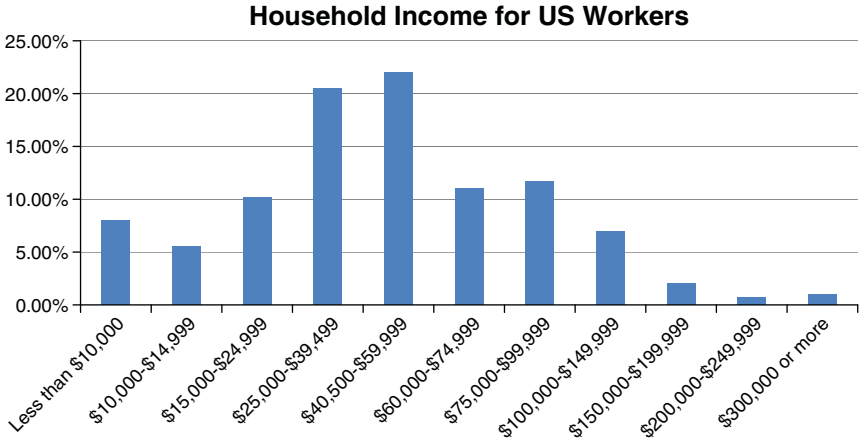

Fig. 2. Retrieved August 12, 2010 from http://behind-the-enemy-lines.blogspot.com/2010/03/new-demographics-of-mechanical-turk.html. Data based on a February 2010 survey of 1000 turkers by Ipeirotis (2010).

Mechanical Turk and employers pay the full cost of the task prior to project commencement and the money paid is a transaction directly from employer to worker. Mechanical Turk then charges the worker 10% of the money paid as a transaction fee.

3.2. Survey marketplaces

The Survey marketplace is a second type of website that has developed as a consequence of the movement of traditional market research to the online environment. An example of this type of marketplace is e-rewards (www.e-rewards.com), which was founded by Brierley and Partners in 1998, when the company decided that online marketing research was the future of the marketing research world. While there is no physical exchange of currency, the workers on this site complete surveys and compensation consists of gifts and rewards. To become a worker for this website, one must be invited directly by Brierley and Partners or by one of the many sponsoring organizations that work with the company (e.g., Pizza Hut, Blockbuster, Hilton, Delta Airlines, Border's). Once a worker has completed a thorough survey including demographic information, marketing research firms offer surveys for workers to complete for "e-rewards currency." This e-rewards currency can be exchanged for airline miles, gift cards, and magazine subscriptions, among other types of rewards.

Brierley and Partners created a paradigm shift in online research marketing by moving from open registration to an invite-only marketing model and giving more control to the survey respondent. Specifically, workers control how often they would like to receive e-mails notifying them of surveys of their interest and the topics and types of surveys they would like to receive. Each survey commences with the estimated time to completion and how much e-rewards currency will be received for completing the survey (Bounds, 2008).

3.3. Business function marketplaces

There are several examples of business function marketplaces, including eLance (www.elance.com), FreeLancer (www.FreeLancer.com), and Guru (www.guru.com). These marketplaces were created with potential employers in mind. As an excellent example of the potential for eLancing to help bridge science and practice, one of the first business function marketplaces, elance.com, was founded by Beerud Sheth, an entrepreneur who read Malone and Laubacher's (1998) article titled "The Dawn of the E-lance Economy" and, subsequently, was inspired to create "infrastructure required to support the e-lance economy" (www.elance.com).

Business function marketplaces were originally created specifically for work related to information technology, but quickly expanded to include a wide range of other types of work. The sheer range and diversity of work offered make business function marketplaces the largest of all marketplace types.

Many small businesses and individuals, who are the potential employees, are attracted to potential employers (i.e., client organizations) through these sites by the ease of use and the familiar request for proposal process that is commonly used offline. Guru and FreeLancer both have more than one million registered users. eLance has a total of over 100,000 suppliers or "experts" that may be willing to provide a client organization with services (www.elance.com). Potential employees range in their expertise from novice to acclaimed professional. The emphasis on past experience and service history is displayed clearly by each website, as a transparent feedback process is a prominent feature on every site. A project cannot be deemed fully completed until both parties involved in the transaction have submitted a feedback form that is typically quite comprehensive. The rating of each employee, or an aggregation of feedback from the many employers he/she has done work for is displayed boldly on each individual's profile and is also included in any proposal that is submitted.

The level of service is important, especially for projects of bigger scope. The emphasis on quality is noted by each marketplace through the use of numerous criteria such as offline certifications and diplomas, tests offered by the marketplace that assess functional skills required, and the proposal submitted which typically includes a description of previous experiences. Each marketplace has created various processes to assess the functional skills of potential employees so that less of the burden and risk of hiring will be on the potential employer. For example, eLance has partnered with Justifacts, a background certification company, to verify credential information such as the legitimacy of a diploma or degree or a criminal background check. eLance also has a number of skills tests available through their Skills Central application that allow potential employees to verify that they indeed are capable of performing tasks they are assigned. eLance also has an algorithm for ranking employees and the ranking algorithm determines the order in which they will be presented to a potential employer when it conducts a search for employees with a certain skill. The algorithm is not fully transparent, but it is based on the following three factors: service delivery, client relationships, and marketing. The service delivery component consists of feedback received based on previously completed projects, status reports submitted, cancellations due to poor performance, and violations on the part of the employee. When an employee is a firm and not an individual, service delivery information also includes earnings and earnings growth for the past six months. The client relationship dimension consists of the number of client recommendations that an employee has received, the average amount of money paid by the client organization to the worker per employer, the number of employers, and the number of repeat employers in the past twelve months. The marketing dimension consists of the number of jobs that an employee has completed, the ratio of jobs offered to jobs accepted, the number of tested skills that have been accumulated, the number of verified credentials, and it is implicitly stated that there is a negative impact on an employee's rating when that employee constantly undercuts other bidders by bidding much lower than an employer's stated budget for projects.

Guru also includes a number of unique features to attract different potential employers to find employees. For example, Guru offers SafePay Escrow, an escrow account that allows employers and employees to agree on an amount and have both parties know that the money is in a safe place and will be sent to the employee pending the completion of the project. All business function marketplaces have escrow accounts, but what distinguishes SafePay from these other escrow services is the free mediation and

arbitration services that come with the escrow service should a disagreement occur between the parties. Guru also has its own patent-pending algorithm for ranking potential employees and it places heavy emphasis on long-term repeat business. There are many other factors that are considered in the ranking system used by Guru, including membership types, main skill categories, invoice activity, and Quality Scores. The Quality Score is the most significant predictor of rank and is comprised of an employee's success rate in securing new employers, producing earnings on an employer-by-employer basis, and having long-term repeat business with existing employers.

FreeLancer includes a similar feature called Milestone Payments System, which is an online escrow account that works much like the escrow accounts of Guru and eLance. The Milestone Payments System allows employers a chance to set up a schedule of when funds are released and also provides employers and employees with a method to dispute both charges and delinquent payment. A unique feature is that FreeLancer charges both employers and employees for the use of its services and while most of the fees for the employer are flat fees, there are numerous charges that can be incurred by the client organization for many different services such as featuring a project on the home page of the website, concealing the project from search engines, or not allowing project bids to be visible.

3.4. Information technology

Information technology was the first type of eLancing marketplace to emerge due to a shortage of highly skilled information technology workers in technology hubs such as Silicon Valley. The information technology marketplace can be viewed almost as a sub-type of the business function marketplace because many information technology marketplaces evolved into business function marketplaces by allowing a wider range of functions. Examples of marketplaces that focus on information technology exclusively are oDesk (www.oDesk.com) and Rentacoder (www.rentacoder.com). While both of these companies have begun to expand the offerings of their marketplaces to include other business functions, they both still have a strong focus on information technology. Overall, the information technology marketplaces have been created to bring employers and programmers or coders together, typically for a short-term project. The projects vary in size and scope, but they always require technical expertise. Some examples of projects may be to update a website or write an iPhone application.

oDesk has proprietary technology that allows employers to record the amount of time an employee actually works on the project for billing and accounting purposes. oDesk uses its technology to provide the employer with transparency that typically does not come with consulting or temporary work and to provide the employee with a way to avoid creating invoices and bills, a guaranteed way to get paid, resolve disputes, track their time worked, and even collaborate with other employees. Rentacoder offers employers and employees many of the same features. They provide testing and certification of skills for employees to signify their worth to potential employers (i.e., the "Expert Guarantee"), which is a trademarked and patent pending arrangement where the employer puts a certain percentage of final payment for a project in escrow for the employee. These funds are forfeited by the employer if the project is not completed and the employer is at fault. If the employee is at fault, the deposit is donated to non-profit charity and, finally, if the project is completed, the employee is paid the agreed-upon amount.

4. A research agenda for eLancing

We emphasize that although eLancing has had an explosive growth, it has not and, in our opinion, will not replace traditional work arrangements. Much like newer media (e.g., television) has not replaced older media (i.e., radio), eLancing is not likely to replace traditional work arrangements. However, the increasing importance and popularity of eLancing worldwide creates a wonderful opportunity for scholars in HRM, OB, and I/O psychology to conduct empirical research that has great potential to bridge the widely documented science–practice gap. We believe that due to differences between eLancing and traditional work arrangements, there is a need to revisit many HRM theories and practices produced over that past few decades to accommodate the new reality created by eLancing. This need is also a result of differences between eLancing and non-traditional work arrangements such as outsourcing and offshoring, temporary work, teleworking, and independent contracting.

In this section of our article we focus on the following eight core HRM areas: job design and analysis, workforce planning, recruitment, selection, training and development, performance management, compensation, and legal issues. For each of these areas, we pose specific research questions that, taken together, constitute a research agenda for investigating eLancing. Due to space constraints, we focus on these eight core areas only. However, we hope that future empirical work will address these and additional areas as well. Similarly, readers may have additional research questions for each of the areas we discuss next. Overall, our goal is to provide an initial research agenda that will serve as a catalyst for future scholarly work on eLancing. Summaries of key differences regarding HRM theory and practice between eLancing and traditional work arrangements as well as research questions resulting from a description of these differences are included in Table 2.

4.1. Job design and analysis

Traditionally, the HRM function, together with line managers, chooses to design certain jobs in a certain way (Brannick, Levine, & Morgeson, 2007). Conducting a job analysis usually involves collecting information provided by job incumbents as well as their supervisors (Aguinis, Mazurkiewicz, & Heggestad, 2009; Cascio & Aguinis, 2011). In eLancing, the job design and analysis roles fall almost exclusively on the eLancer. The employer's HRM function may define the work that must be completed for a certain project but, unlike in traditional work arrangements, the eLancer has much more latitude in choosing the particular tasks to be completed. By

Table 2
Differences between eLancing and traditional work arrangements and research questions for eight key human resource management areas.

	Traditional work arrangements	eLancing	Research questions
Job design and analysis	The employer designs the job and hires employees who, for the most part, must conform to the description provided.	The eLancer designs the job and finds potential employers that are in need of work that conforms to the eLancer's job description.	How do eLancers design their jobs? How often do they change their job descriptions? What are the factors that are related to these changes? What type of negotiation takes place between eLancers and employers to find common ground between an eLancer's job description an en employer's needs? How does the change in balance of power between eLancers and employers regarding who designs a job affect the employer–employee relationship and task completion?
Workforce planning	Employers make assumptions about future trends in planning the workforce's future size and characteristics.	Employers use an "on-demand" workforce model in which the workforce's size and other characteristics ebbs and flows with the amount and types of tasks that need to be completed at any particular point in time.	What are the financial implications of the eLancing model? Do savings incurred in the "on-demand" model pay off? What is the role, if any, of organizational commitment, loyalty, and trust? Does the employer–employee relationship turn into an exclusively transactional relationship and what are the implications for long-term organizational sustainability?
Recruitment	Employees know who the employer is and person–organization fit, job/organizational characteristics, and organizational image are central factors affecting recruitment efforts.	eLancers may not know who the employer is and, even if they do, they may not know the brand/name because the employer may be located in another region in the world.	What is the role, if any, of person–organization fit, job/organizational characteristics, and organizational image in the recruitment process? What is the role of "eLancing reputation" and word-of-mouth referrals? What is the role of eLancing social networks in the recruitment process and its effectiveness? What is the role of a particular marketplace's image and reputation in terms of recruiting highly qualified employees?
Selection	Employers use predictors of performance, usually assessing thin slices of behavior and a targeted set of knowledge, skills, and abilities (KSAs) related to job performance.	Employers use data on eLancers' past performance to predict future performance.	What is the relative validity of past performance compared to KSAs in predicting future job performance? What is the relationship among various types of past performance (e.g., quality, quantity, speed) and various types of future performance? Is past team-level performance a better predictor of future team-level performance compared to individual level KSAs?
Training and development	Employers provide employees with the competencies, knowledge, and skills to do their current jobs as well as assist employees in preparing for different roles that they may hold in the future.	The onus for training and development falls entirely on the eLancer.	What is the impact of lack of training and development opportunities on an employer's ability to recruit qualified employees? Are eLancers, on average and holding other variables constant, better trained and educated for particular tasks compared to employees in traditional work arrangements? Does a country's eLancing activity increase its human capital, overall productivity, and global competitiveness?
Performance management	Performance management is "a continuous process of indentifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization" (Aguinis, 2013, p. 2).	Rather than performance management, the system can be called "outcome management" because it is mainly administrative and results-oriented.	Would eLancing benefit from a more process-oriented system and will the benefits outweigh the costs? Will eLancers be more attracted to employers offering a performance management compared to an outcome management system? What is the impact of the transactional nature of the eLancer-employer relationship on performance, if any?
Compensation	Compensation systems are quite complex and often dependent on the internal alignment and external competitiveness goals of the organization.	Compensation systems are simple and market-based: eLancers bid on projects by determining their own hourly rate and estimating the number of hours it will take to complete the task.	Would pay for performance help improve the performance of eLancers? If yes, under what conditions and for what types of tasks?

(continued on next page)

Table 2 (*continued*)

	Traditional work arrangements	eLancing	Research questions
Legal issues	There are many complex legal issues that must be complied with, but these legal issues typically only apply to one country.	There will be complex legal issues from numerous countries that must be complied with, but the impetus may fall on the marketplaces to navigate such issues.	Will a company that contracts a project to an eLancer in India be subject to all of the same regulations as a company that contracts a project to an eLancer in the United States? How will the current laws be enforced? What about issues of sexual harassment or discrimination?

choosing which tasks to complete and when, each eLancer designs his or her own job on an ongoing basis. Moreover, an eLancer has the ability to change the design of his or her job daily if he or she chooses to do so. Although the literature on job analysis has transitioned from a definition of "jobs" to a definition of "roles" and knowledge, skills, and abilities (KSAs) are now defined more broadly (Aguinis et al., 2009), eLancing takes both of these concepts to the extreme.

The distinctive nature of job design and analysis in eLancing leads to several research questions. Many of these questions are related to the underlying issue that there is a change in the balance of power between employer and employee in terms of which party has more say in how jobs are designed. For example, employers have specific work that needs to be done for their organization to be effective, but eLancers also have a defined job that they are willing to do. The new eLancing reality places employers in an interesting position of deciphering how all the necessary tasks that must be completed will get done using the eLancing model. There are many different possible routes available to the employer and the eLancer. For example, the eLancer may decide to expand his or her role to meet the employer's needs or the eLancer may also choose to contract part of the work to another eLancer. Thus, the job design and analysis process likely involves negotiations and finding common ground between an employer's needs and employee's needs and KSAs.

4.2. Workforce planning

eLancing allows organizations to be much more flexible regarding the size of their workforce. The eLancing model allows the size of an organization's workforce to ebb and flow with the size and amount of tasks that need to be completed at any particular point in time. In traditional work arrangements, workforce planning can be a significant source of stress for the HRM function, especially at present given that baby boomers are retiring or planning to retire at a much higher rate than the anticipated workforce growth (Fox, 2010; Toosi, 2002). eLancing fundamentally changes the workforce planning process. For example, the HRM function does not need to make often untenable assumptions and predictions about future labor supply and demand. Also, it is less expensive for employers to hire employees on an as-needed basis. Thus, eLancing allows for an "on-demand" workforce that is created with great flexibility and agility. However, there is another side to this coin and there are important research questions that need to be answered. For example, to what extent will this "on-demand" model create employer–employee relationships that are purely transactional? What is the role of organizational commitment, organizational trust, and organizational loyalty in eLancing? These are important antecedents of job satisfaction and job performance in traditional work arrangements. What is the relevance, if any, of these constructs in eLancing?

4.3. Recruitment

In traditional work arrangements, the three predictors that have the highest known relationships with recruitment outcomes are perceptions of person–organization fit, job/organizational attributes, and job image (Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005). eLancing changes the nature of each of these three factors that play such a crucial role in traditional work arrangements. First, regarding person–organization fit, eLancers do not typically know which specific organization has hired them. eLancers do not know much about the employer's culture, values, mission, or vision. They may not even know the employer's geographic location or even industry sector. The focus of eLancing is shifted from the organization to the task and, consequently, issues about person–organization fit are likely to lose significance. Second, the same considerations apply to issues around organizational attributes, as described earlier in the section on Job design and analysis. Third, in terms of job image, this factor is also likely to lose importance in eLancing given that eLancers often do not necessarily know which organization has hired them. Even if an eLancer knows the name of the organization that has hired them, it is very likely that the employer is from another region in the world and, hence, the eLancer has never heard of the organization before. So, the effects of image, reputation, and branding on recruitment may be minimized. In eLancing, the image that may matter the most is the image that the organization projects in the marketplaces and through word-of-mouth from eLancer to eLancer. In fact, studying social networks of eLancers may provide a window into a particular employer's image and reputation. Also, this image and reputation may be determined, in part, by the image and reputation of the particular marketplace(s) in which the employer chooses to participate.

4.4. Selection

In traditional work arrangements, job applicants take various tests assessing their KSAs and the resulting scores are used to predict future performance. As described by Cascio and Aguinis (2008b), this model relies on thin slices of behavior: employers can only see the tip of the iceberg in terms of a job applicant's entire domain of work behaviors and KSAs. eLancing allows for a different model. In fact, eLancing allows for a more proximal evaluation of employee performance because, instead of an examination of predictors of performance, employers can actually evaluate past performance as a predictor of future performance. Moreover, employers have information on job applicants' in situ *performance*: "the broad range of effects – situational, contextual, strategic, and environmental – that may affect individual, team, or organizational performance" (Cascio & Aguinis, 2008b, p. 146).

Although much progress has been made in the past 90 years of selection research (Schmidt & Hunter, 1998), the fact is that even the concurrent use of the very best predictors of performance (e.g., general cognitive abilities, job knowledge) leaves more than 50% of variance in job performance unexplained. A major innovation of eLancing is that employers do not need to use KSAs as predictors of future performance. Instead, they can use past, very immediate past, performance as a predictor of future performance. As described earlier, the majority of marketplaces include information on past performance (e.g., eLance's Justifacts). Note that Schmidt and Hunter's (1998) review of meta-analyses concluded that the validity of work sample tests is .54, the validity of job tryout procedures is .48, and the validity of peer ratings is .49. A common characteristic of each of these types of tests is that they rely on past performance, and not KSAs, as the predictor of future performance. Given the high degree of validity of these selection tools, eLancing provides a perfect context to test hypotheses on the extent to which various types of past performance indicators (e.g., quality, quantity, speed, and so forth) can be used as good predictor of future performance. Such a line of research would not only create new knowledge directly relevant for eLancing practices, but also for personnel selection theory in general. For example, the use of recent past performance as a predictor of future performance, instead of the use of general mental abilities, may lead to less adverse impact against members of ethnic minority groups (cf. Aguinis & Smith, 2007).

There is particular interest on the part of the marketplaces to offer high-quality information that employers can use to predict applicants' future performance. The marketplaces are now competing not only on providing a high number of specialized workers, but also on providing better selection models than their competitors. This incentive system encourages each marketplace to constantly improve the quality of the data they collect to be used in selecting employees.

Finally, there is an additional important research direction regarding selection. In traditional work arrangements, selection consists of measuring individual's characteristics and, based on these measurements, predicting future individual performance. eLancing allows for an examination of past group performance. Specifically, ratings and data on tasks completed by a group of eLancers, or a small business, are readily available. Thus, when selecting a group of individuals to complete a task, an employer could examine team-level past performance instead of aggregating individual-level predictors of performance. There is a need to examine whether the examination of team-level past performance is indeed a better predictor of future team-level performance compared to other traditional approaches.

4.5. Training and development

The traditional model for training has focused on the need for organizations to provide employees with the competencies, knowledge, and skills to do their current jobs as well as assisting employees to prepare for different roles that they may hold in the future (Aguinis & Kraiger, 2009). In fact, employers who provide better training and development opportunities are likely to recruit more highly qualified employees (Gatewood, Gowan, & Lautenschlager, 1993). In contrast, eLancers are required to have the appropriate competencies to accomplish whatever task is assigned to them. Due to the contingent and short-term nature of the relationship between the eLancer and the employer, employers are not necessarily invested in providing opportunities for the eLancer's development.

The career development literature highlights a change over time in that, currently, employees are held responsible for updating their skills and their employers should provide opportunities and resources so employees can do so (Rousseau & Wade-Benzoni, 1995). In eLancing, the employee's responsibility is taken to the extreme. In fact, the eLancer is solely responsible for updating his or her skills and the employer has no responsibility whatsoever in terms of providing resources for employees to do so. In other words, in eLancing, the onus for training and development falls entirely on the eLancer.

The eLancing context leads to important research questions. Will the fact that eLancers compete against each other in a global and open market lead them to seek better, more relevant, and useful training and development opportunities on an ongoing basis so they are able to secure more and better work? If this is true, are eLancers, on average and holding other variables constant, better trained and educated for particular tasks compared to employees in traditional work arrangements? If this is true, then regions or countries with more eLancers could end up with higher levels of training and education compared to regions or countries with fewer eLancers. Following this line of reasoning, will a country's eLancing activity increase its human capital, overall productivity, and global competitiveness? The answers to these questions have important societal implications regarding a nation's international competitiveness.

4.6. Performance management

In traditional work arrangements, performance management is "a continuous process of indentifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization" (Aguinis, 2013, p. 2).

Compared to traditional work arrangements, performance management in eLancing is vastly different given that the nature of the employee–employer relationship is vastly different. As described in the Training and development section, employers of eLancers are not necessarily interested in employees' performance development. Also, as described in the Recruitment section, eLancers are mostly unaware of an organization's strategic goals. In addition, the measurement of performance in eLancing usually takes place only once: when the project is fully completed.

In eLancing, rather than performance management, there is *outcome management*. Stated differently, the employer–employee relationship is transactional and outcome-based. The eLancer is interested in completing an outcome on time and according to the employer's specification so he or she can be compensated and receive positive ratings. The employer is not necessarily interested in the eLancer and his or her development or even behaviors (i.e., how the job is done) but, rather, in the outcome of the particular task in hand. Thus, in contrast to traditional performance management systems that include (a) administrative and developmental, and (b) behavioral-process and outcome-results components (Aguinis, 2013), eLancing's "outcome management" is exclusively administrative and result-oriented. Note, however, that if part of the outcome is to complete a task within a particular time frame, it is possible to gather information on time to completion. For example, oDesk (www.odesk.com) allows employers to see and monitor and track the true amount of time an eLancer spends working on a project assigned to him or her.

There is no scholarly information we are aware of regarding the outcome management system used in eLancing. Would eLancing benefit from a more process-oriented system? Will the benefits outweigh the costs? Similar to the discussion on Training and development, will eLancers be more attracted to employers offering a performance management compared to an outcome management system? What is the impact of the transactional nature of the eLancer–employer relationship on performance, if any?

4.7. Compensation

In traditional work arrangements, the compensation systems are quite complex and often dependent on the internal alignment and external competitiveness goals of the organization (Gerhart, Rynes, & Smithey Fulmer, 2009). In comparison, compensation systems in eLancing are simple and the majority of decisions that an employer needs to make are purely market-driven. Essentially, eLancers bid on projects by determining their own hourly rate and estimating the number of hours it will take to complete the task. This same bidding process is used across the majority of marketplaces. Together with the bid, eLancers must also provide evidence through the use of past experience or certifications to show that he/she is worth the hourly rate requested.

In traditional work arrangements, pay for performance has been used as a way to motivate employees and encourage higher levels of performance (Aguinis, 2013; Gerhart et al., 2009). Similarly, pay for performance could potentially be also used in eLancing. For example, an agreed-upon hourly rate could increase by 15% if time to completion is decreased by 15%. Similarly, the agreed-upon hourly rate could be increased if the number of errors is negligible. The extent to which such pay for performance interventions would enhance productivity and performance in eLancing is unknown.

4.8. Legal issues

There are numerous regulations that businesses registered in the U.S. must abide by when recruiting, selecting, training, and terminating employees (Cascio & Aguinis, 2011). While many of these regulations still apply to companies who provide work to eLancers, some of these regulations may not. It is quite difficult to tell which of these regulations can be applied and which cannot (Cihon & Castagnera, 2008). The many different scenarios in which a company may hire an eLancer present difficulties to all parties involved as to which regulations to follow. For example, will a company that contracts a project to an eLancer in India be subject to all of the same regulations as a company that contracts a project to an eLancer in the United States? How will the current laws be enforced? What about issues of sexual harassment or discrimination? It is possible for a client organization looking to hire an eLancer to never know the true identity and demographic characteristics of the eLancer or the eLancing company behind the wall of the third party website.

5. Conclusions

eLancing is a work arrangement that has the potential to change the way work is done globally because it is becoming a powerful economic phenomenon worldwide. In addition, eLancing, due to its unique type of work arrangement, has the potential to change employment relationships in the 21st-century's international society. There are a number of economic, cultural, technological, and social changes that may encourage companies to embrace eLancing, much like millions of individuals around the world are doing so on a daily basis. The eLancing phenomenon presents an important challenge for HRM research and practice because many of the established theories and applications may need to be revised, and others newly created, to accommodate the new eLancing reality. However, this challenge presents a very unique opportunity for the fields of HRM, OB, and I/O psychology. We are optimistic that scholars in HRM, OB, and I/O psychology will understand the importance of eLancing and will seize the opportunity to make an important contribution to our knowledge base about the 21st century's global and diverse world of work.

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