

Dissertation

CROWDSOURCING BUSINESS MODELS

FOCUSING ON THE CROWD-LABOR INDUSTRY AND THE
IMPLICATIONS FOR MANAGEMENT AND MARKETS

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Abstract

Purpose: This thesis analyzes the Crowd-Labor phenomenon, a subset of the Crowdsourcing industry where users of the related online platforms post tasks/projects and other users work on those tasks, usually in exchange for a payment. This work documents the current status of the platforms operating in this industry, providing new information regarding the numbers and trends. Its second objective is to understand how those companies are organized, what features they possess and how those features are related across different types of platforms.

Methodology: Data collection regarding seventy-seven (77) characteristics from fifty-one (51) platforms. The characteristics are about the platforms themselves, their operations and the features they offer to their users. That was followed by an analysis of the data, and a grouping of certain related characteristics (for example, the sum of the number of available languages on the platform) and a correlation analysis to understand which types of platforms exist and what kind of platforms obtain that best performance.

Findings: The analysis revealed that there are clusters of platforms based on the type of tasks/projects available on those platforms. Industry characteristics related with performance were analyzed, namely the existence of a forum, APIs, open challenges, the possibility of login & register using Facebook, fix payment fees for contractors, a leaderboard, the existence of multiple languages, internal exams for contractors to get certifications, tracking quality mechanisms and the possibility of project owners only paying when satisfied. Automated features (APIs and internal exams/certifications) stood out as a new positive performance differentiator for this recent industry, which is an original literature contribution originated from this thesis.

Practical use: This work presents the current state of the Crowd-Labor industry, its benchmarks or industry standards, users' motivations and a fact based opinion regarding its future, creating new knowledge that could be particularly useful for researchers, academics, crowdsourcing initiative owners, crowd-Labor users, entrepreneurs and investors.

Limitations: An important limitation is that some of the answers to the characteristics used to analyze the Crowd-Labor Platforms were not made public by the platform owners, which didn't make possible to capture the full picture of some of these platforms. However by studying 51 platforms, the collected data offers statistical evidence in the form of correlations that are statistically significant, which support the conclusions drawn from the analysis.

1. Introduction

This thesis will discuss crowdsourcing and how it's recent and quick evolution is changing the way companies do business, creating value for all the parts who participate, new delivery channels, faster route to markets and the rapid involvement of firms with thousands of users spread around the globe.

This research focuses on a specific theme within crowdsourcing, namely Crowd-labor. Crowd-labor is the use of a crowd to perform a certain task. The task can vary in size, complexity, include the payment of a certain amount or require a specific set of skills required to perform it. The industry benchmark is that, through a platform, a person offers a project opportunity and receives bids from people willing to perform that task or project.

Crowd-labor is one of the types of Crowdsourcing that has been growing steadily in the last years, as can be proven by the high number of platforms who have been created in the last three years (8 out of the 51 engaged platforms), and their high number of Page Views and Registered Users.

The numbers available online validate the high growth of this industry. A study from Crowdsourcing.org, a group specialized in analyzing and spreading news regarding crowdsourcing, states, "Crowd-Labor revenues were up 75% in 2011 to \$375 million. And the number of crowd workers is growing even faster, climbing more than 100% last year, with about 40% of the 6-million-member workforce living in developing countries."¹

Crowdsourcing already has a strong presence and unquestionably is going to consolidate and grow. In this sense, it's important for companies and managers to know what it is truly about, how they can take advantage of it, and which platforms are the most appropriate to create value.

Odesk CEO Gary Swart, one of the biggest platforms studied in this thesis, states that² "the increase in online workers is actually boosting the job market, since more than 80 percent of employers indicated they would not have hired locally if online workers were unavailable", which means Crowd-Labor Platforms usage by companies can help them focusing on their core

¹ <http://articles.latimes.com/2012/jun/09/business/la-fi-crowd-labor-20120609>

² <http://www.businessnewsdaily.com/3242-remote-workers-jobs-increase.html>

businesses, and reducing fix costs with support activities where they are not specialized and cost-effective.

2. Literature Review

A) Crowdsourcing

In 2006, Jeff Howe described Crowdsourcing as “a process that involves outsourcing tasks to a distributed group of people”. The origin of the word is “crowd + outsourcing”. Dozens of other definitions can be found online, each slightly differing from the others, but with the same purpose of using a large, dispersed group of people to achieve an end. Even though this definition was only created in 2006, Crowdsourcing initiatives could already be found before that, such as Elance, an online platform for Crowd-Labor, or Linux, the famous open-source software and self-organized community.

There are different types of Crowdsourcing activities, differing mainly because of the use they make of crowds. Currently, Crowdsourcing is already being used by multinational companies for purposes such as worldwide news reporting, large scale surveying and prediction markets, problem-solving, image labeling, language translation, research & development, funding, innovation or software development.³ Their value proposition can be achieved through *Collaboration* (between users, or between users and the platform), through *Competition* (between the crowd to achieve a certain result) or as a *Collection* of disperse portions, creating value because they are put together.⁴

Crowd-Labor (also known as *Cloud Labor*) is a sub group of Crowdsourcing initiatives. It consists of a platform to connect demand and supply of the *work* input. Crowd-Labor can be defined as “Leveraging of a distributed virtual labor pool, available on-demand to fulfill a range of tasks from simple to complex. Crowdsourcing is used to connect labor demand and supply. Virtual workers perform activities that range from simple to specialized tasks”⁵.

Indian Outsourcing Service Providers (OSP) were the first successful proof that a globalization of workforce can be achieved, paving the way for Crowd-Labor enterprises to arise.⁶

³ Online Distributed Innovation, Villarroel 2013, Strategic Crowdsourcing. In “Leading Open Innovation”, MIT Press.

⁴ Online Distributed Innovation, Villarroel 2013, Strategic Crowdsourcing. In “Leading Open Innovation”, MIT Press.

⁵ <http://www.crowdsourcing.org/community/cloud-labor/6>

⁶ Carl Esposti, “Learning from the pioneers of offshore outsourcing”

In order to surpass the difficulties resulting from working from a large physical distance from their employers, such as privacy and security concerns or technical challenges, Indian OSPs helped and encouraged their customer firms to disaggregate their processes into small tasks that can be done with more ease and lower risk by their own contractors. This concept is named *Granularity* by several scholars studying crowdsourcing and is key for companies to be able to have their work done by crowds.

B) Shift from a centralized to a decentralized dynamic of Information

In 1945, Hayek concluded that the information decision-makers of a Rational Economic organization needs is never “given” to a single person, instead, it “consists of *dispersed* bits of incomplete knowledge that separated individuals possess”. The problem he faced is how to gather this information in a timely manner. Hayek’s solution to this problem was the Price Mechanism, which served to coordinate actions from different individuals. Comparing with Crowd-Labor Platforms (CLP), we observe many Project Owners (companies or not) with needs of specific knowledge or labor skills. This need is solved by another aggregator than price, the Platforms themselves, who gather those Project Owners with a challenge/lack of capabilities, with the Solvers/Contractors who provide the solution and labor.

Since 1945, communication costs were greatly reduced, making possible to share large amounts of information instantaneously, which allows a faster and more effective decentralization of decisions and labor. Besides, the reduction of technology costs (Moore’s Law) has reduced the gap between professional services and what amateurs can offer for a much lower cost (photography or video editing are industries who perfectly illustrate this phenomenon), creating new Markets who beat Firms in terms of performance and change the way business is being conducted.

Evans and Wurster’s “Blown to Bits - How the new economics of information transforms strategy” book addresses what was until so far a trade-off between richness of information and reach of a certain message, but changed with the employment of new information technologies, automation and new web-based distribution channels.

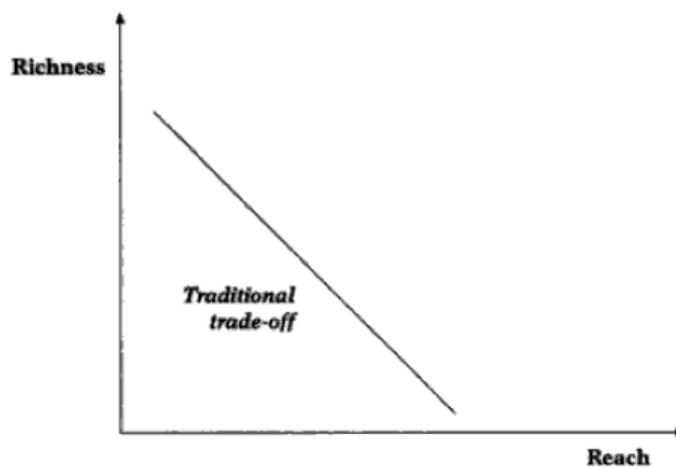
They define Richness of information as enclosing six aspects:

- “Bandwidth or the amount of information that can be moved from sender to receiver”;
- “The degree to which information can be customized”;
- “Interactivity”;

- “Reliability”;
- “Security”;
- “Currency”.

Reach can be defined as “the number of people who participate in the sharing of that information”.

Crowd-Labor Platforms may have several parameters that make the platform rich in terms of content and differentiate from their competitors in terms of value offered to its users. This richness has a positive impact in terms of user Commitment and interactivity between platforms and users.



Source: Philip B. Evans and Thomas S. Wurster, “Strategy and the New Economics of Information,” *Harvard Business Review*, September–October 1997, p. 74.

Figure 1. Traditional trade-off between Richness and Reach of information

This traditional trade-off is disappearing, as new communication technologies have been arising and democratized among society. For example, Webinars increased the Reach of a traditional Seminar from a classroom to a worldwide target of interested people, but now it allows the person talking to ask polls and receive questions in real time through Tweeter or email, allowing him to customize his speech to the interests of the audience, keeping a certain degree of interactivity, besides receiving real-time feedback and information, which means Richness.

The Information Revolution mentioned by Evans means the creation of a new distribution channel for products and services, and its especially interesting for Crowd-Labor Platforms because allows a “Commoditization” of knowledge work thanks to knowledge markets created by CLP.

C) Organization of firms and individuals in a market

In 1937, Ronald Coase explained why individuals organize themselves in the form of a firm/company, and hire instead of contracting in a market, stating that “that there are a number of transaction costs to using the market; the cost of obtaining a good or service via the market is actually more than just the price of the good. Other costs, including search and information costs, bargaining costs, keeping trade secrets, and policing and enforcement costs, can all potentially add to the cost of procuring something via the market. This suggests that firms will arise when they can arrange to produce what they need internally and somehow avoid these costs.”

This justifies why firms were for many years more efficient than markets, but the fast changing pace of technology, communication and internal organization has led to a new type of markets, Internet based markets.

Internet based markets (or e-markets)⁷ are a place, where individuals and firms can perform business, through the support of an information system. Examples of types of e-markets that appeared in the past are the financial markets, energy, commodities, consumption goods, diverse auctions, and most recently, crowdsourcing and Crowd-Labor markets.

These modern electronic Markets possess diversified and a bigger offer and demand, which means better value for buyers and a more efficient market. Besides, it is easier to search and compare between the offers finding what you are looking for.

But until not long ago, only commodities were traded with success in large open markets, due to the fact that they were non-personalized, comparable goods. Recently, a commoditization of services is shifting the paradigm, allowing more services and products to be traded in markets, and professional services projects’ to be transitioned through the online channel. Commoditization is “the process by which goods that have economic value and are distinguishable in terms of attributes (uniqueness or brand) end up becoming simple commodities in the eyes of the market or consumers.”⁸

Commoditization is making new markets appear, which trade products and services only companies did in the past. A good example is the emergence of Sports Bet markets. Until a

⁷ http://en.wikipedia.org/wiki/Electronic_markets

⁸ <http://en.wikipedia.org/wiki/Commoditization>

few years ago, users could only bet against the betting company, which had much lower returns for users and an almost static pricing mechanism defined a priori by the company's book markets. Betfair, an English betting company created a bet exchange platform, where users bet against each other, and takes a percent commission from each profit made. Besides, betting against other users allows bets in real time during the games. In 2010 Befair had a Net Income of 23M pounds.

These innovations allowed Betfair to perform way better than all the other online betting houses in the world in the last couple of years, eliminating bookmakers, incorporating ideas from the Stock Market, and letting the market take its course, charging commissions with it.

Users are happier to bet at higher odds (creating value), and Betfair is currently holding a solid business model charging commissions with their wins (in every bet there is a winner, so there's always a commission) and aiming for high volume. In this case, Market beats firms, and firms can create new types of e-markets and profit from it, creating new industries that did not exist in the past.

These firm sponsored markets are a kind of initiative we can continue to expect to see given the rise of e-markets for Photography, Writing, translating, programming and many other services that until previously were considered to be made "in-house" by most firms or through the engagement with a supplier/service provider.

D) Industry Overview

The Crowd-Labor industry presents several unique factors, detailed bellow, to better characterize and describe it, allowing an understanding of the type of projects/tasks currently available for completion in Crowd-Labor platforms:

Microtask- a small task, which can be performed almost by every contractor and has a low level of complexity. Has a range of required time to perform between a few seconds and thirty minutes.

Macrotask – a medium size task, which can require some specialization and has a medium-low level of complexity. Has a range of required time to perform between thirty minutes until 8 hours.

Simple projects – a small project, which usually requires specialization and has a medium level of complexity. Has a range of required time to perform between 8 hours and a week.

Complex projects – a large project, which usually requires specialization and has a medium-high level of complexity. Has a range of required time to perform bigger than a week. Given the different type of projects available, we can have different platforms focusing on certain types of projects, for example Mechanical Turk focuses on Microtasks, while other platforms include the four types of projects, such as Odesk, Freelancer or Elance.

These types of tasks and projects include several different fields such as engineering, programming, multi-media, content review, information search or categorization, finance, management, (online) marketing, and several others, including generalist tasks like image labeling or counting.

Tasks and projects are posted on Crowd-Labor Platforms by Project Owners, individuals or firms who subcontract through an online based marketplace Contractors perform that task/project.

E) Hypothesis

Before the end of the data collecting phase, and given the content of the literature available, the analysis of several platform's website and the engagement with several Crowd-Labor platforms, several premises were presumed about this growing industry, namely:

- Number of **Registered Users** is **positively** correlated with:
 - **Reach** – if a platform has more people seeing its website, it is expected to have more registered users;
 - **Total number of projects** – if a platform has more projects available, it should have more users registered looking forward to work on those projects;
 - **Facebook Login & Register** – a platform that allows users to register and login in an easier way should have more registered users.
- **Fix fees** and **Credit Card Requirements** are **negatively** correlated with **performance** – if a platform has fix fees and credit card requirements, it's performance should be lower because users dislike those mandatory characteristics
- **Commitment** is **positively** correlated with:
 - **Internal and External Communication Tools** – it is assumed users have a higher commitment to the platform if they have more tools to communicate among themselves and with platforms owners;

- **Reputation Parameters** – if a user has reputation characteristics that positively differentiate him from other users, they will make a bigger effort to engage correctly.
- **Partnerships** are **positively** correlated with:
 - **Number of Users** – if a platform is mentioned more often, it can attract more users;
 - **Reach** – if a platform is mentioned more often, it can have more people visiting its website.
- **Older platforms** have a **bigger**:
 - **Number of Users** – if a platform is operating for longer, it should have been able to attract a bigger number of users than a new platform;
 - **Reach** – if a platform is operating for longer, it can have more people visiting its website.
- **Number of Total Projects** is **higher** when there is:
 - **Free Trials** – If the possibility of free trials exist, new Project Owners will be more likely to try the platform;
 - **Pay Only when Satisfied** – If Project Owners only pay for a service that has quality, the number of projects will be higher-
- **Microtasks** are **paid mainly by task** – These small tasks are paid by their output and not by the hour, because there is no specialization
- A platform that **allows Users to post projects and work on other users' projects** is **positively** correlated with a **higher number of projects**

3. Methodology and Data

The study performed in this thesis consists in the data gathering and understanding of 51 platforms that operate in the Crowd-Labor market described above.

This analysis focuses mainly on project marketplaces, and not on expert communities' platforms⁹.

Project marketplaces are crowdsourcing platforms where two types of Users participate, Project Owners and Contractors.

Project Owners post tasks or projects, and the information related to them, such as their detailed description, technical requirements, and the amount of payment, among others.

On the other side of the platform are the Contractors, which are the users who bid to participate and win the participation on the project. The type of project, required skills, length, payment and several other characteristics can widely vary, and that has a big impact on the Crowd-Labor platform business model. These differences that occur from platform to platform were the main aspect of the data gathering that supported this study on the different types of platforms available nowadays.

For all the selected platforms, the availability of same seventy seven (77) characteristics was analyzed (see Annex 1 for the detailed description of each characteristic). The characteristics can be grouped as related to the topic of Platform, Projects, Contractors and Project Owners.

- **Platform:** parameters regarding the platform itself as well as the company behind it, such as info regarding where it comes from, how many users visit the platform, the languages available or how it makes money.
- **Projects:** Characteristics regarding the type of projects available on the platform at the moment of the data gathering, such as the "size" of the project, the category (finance, programming, etc.) and how does the matching between the Project Owner and Contractor occurs.
- **Contractors:** Characteristics Contractors' characteristics, their registration process and the tools and information available for them on the platform.

⁹ Expert communities are websites which are focused only on projects related with only one type of expertise, such as programming or photography,

- **Project Owners:** Project Owners' characteristics, their registration process and the tools and information available for them on the platform.

Due to the difference in the types of tasks available in platforms, which has impact in the business model they present, clusters of platform types were added to the analysis.

The sample includes types of platforms based on the categories of tasks/projects they possess:

- **Microtasking:** Platforms where mainly Microtasks are available for Contractors to complete;
- **Simple Project Marketplace:** Platforms where mainly Macrotasks and Simple projects can be found;
- **Specific Project Marketplace:** Platforms where there is specialization of tasks. For example, certain platforms only have projects for Programmers, or Marketing Related. Tends to present only Simple and Complex Projects.

4. Results and discussion

A) Industry Insight

The aggregated numbers of analyzed platforms shows us a partial but significant picture of the Crowd-Labor Industry, as demonstrated by:

- 19,1 Million registered users in 38¹⁰ of the 51 analyzed platforms;
- 957.000 open projects were available for completion at the end of the data gathering phase;
- The average platform age is close to 5 years;
- The most common revenue source is Percentage Commission, present in 79% of the platforms (but not exclusively). A study performed by crowdsourcing.org states that the commissions of the three biggest Crowd-Labor companies, oDesk, Elance and Freelancer are, respectively, 10%, 8,75% and 13%¹¹;
- USA is the country where more platforms are originated from, with 16% of the platforms analyzed, followed by 9% from the UK;
- 16% of the platforms state to have Partnerships, being their clients the partners in the majority of the cases;
- Regarding the Internal Communications present in the platforms, 94% have communications between Users and Platform Owners, being those communications made through an e-mail address available on site or through an internal communication mechanism (such as chat or private messages). More than 75% of the platforms allow communications between Contractors and Platform Owners, but only less than 30% allow communications between the same group of users(Contractors communicating with other Contractors or Project Owners communication with other Project Owners);
- 27% of the platforms possess an internal Forum;
- Concerning Social Networks, 88% of the platforms have an active Facebook Corporate Page, and 76% use more than two Social Networks to connect with their communities;
- 33% of the platforms allow users to post projects and to work on other users' projects using the same user account;

¹⁰ 13 platforms do not reveal publicly the number of Registered Users.

¹¹ <http://www.crowdsourcing.org/editorial/a-comparison-of-big-crowdsourcing-platforms-infographic/26844>

- 20% of the platforms have internal exams for users to get skill certification, but only 8% give users training tools to acquire new skills through e-learning in the platform;
- Regarding the Payment Method, 94% of the platforms allow a Payment per Task, while only 29% allow Payment per Hour, showing us that the industry benchmark is to pay only per the output, and not by the amount of work performed by the employee;
- 49% of the platforms allow Project Owners to only pay contractors after they review and approve the work done, although only 8% allow to Track Quality as work is being performed.

B) Correlation Analysis ¹²

To understand desirable characteristics a platform should have, performance parameters were defined. All the observed characteristics were then compared with those performance characteristics, in order to be aware of which ones create value or are desirable for the Crowd-Labor Platform.

The defined Top Performance Parameters are:

- Reach¹³ – number of different people who visit the website, which is an indicator of a measure of the activity and business generated by the platform;
- Pageviews/User¹⁴ – number of pages each user visits in the platform, which demonstrates the level of engagement users have in the platform;
- Facebook Likes – number of Facebook likes in the platform's website, which shows us how many people are socially connected to the platform;
- Number of registered Users – Number of users registered in the platform. It shows us a low number of correlations with the other characteristic, creating doubts regarding its significance, mainly due to the fact it incorporates the presence of inactive users.

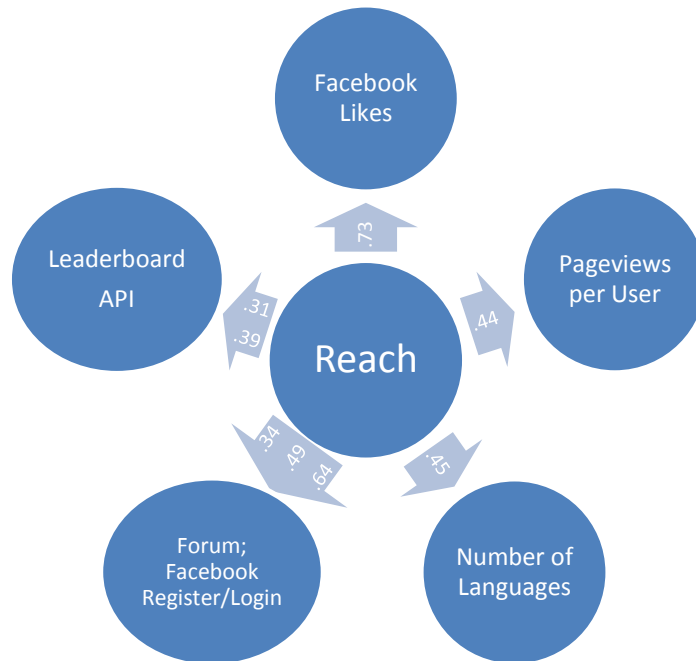
Starting with the most relevant performance parameter, Reach, we can observe it is highly correlated with the other performance parameters (PageViews and Facebook Likes),

¹² The correlations presented in this section signaled with a "*" are referent to a correlation relevant at a 5% significance level, while the ones presented with "***" are relevant at a 1% significance level. In the graphics, a correlation with more than .39 is already statistically significant at 1% significance level, while a correlation smaller than .39 is statistically significant at 5% significance level.

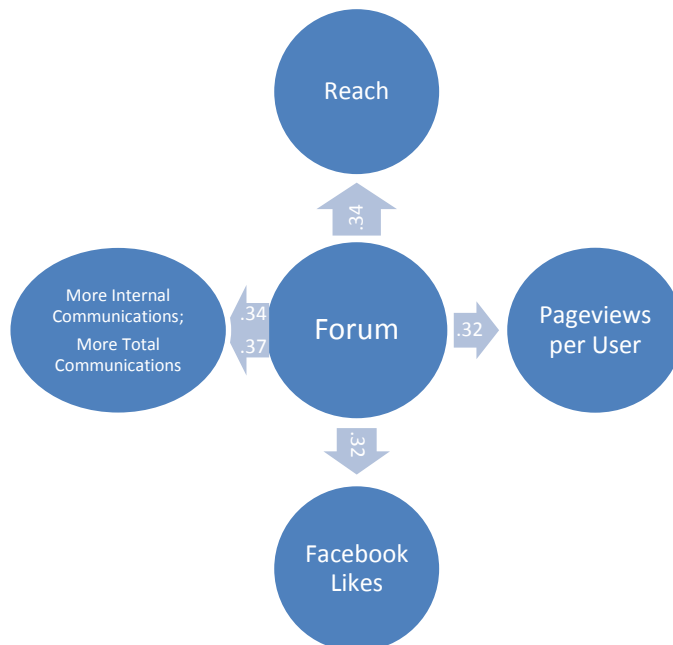
¹³ As publicly available at www.Alexa.com a global leader in web analytics

¹⁴ As publicly available at www.Alexa.com a global leader in web analytics

confirming that all of them are valid parameters to compare as measures of platform performance.

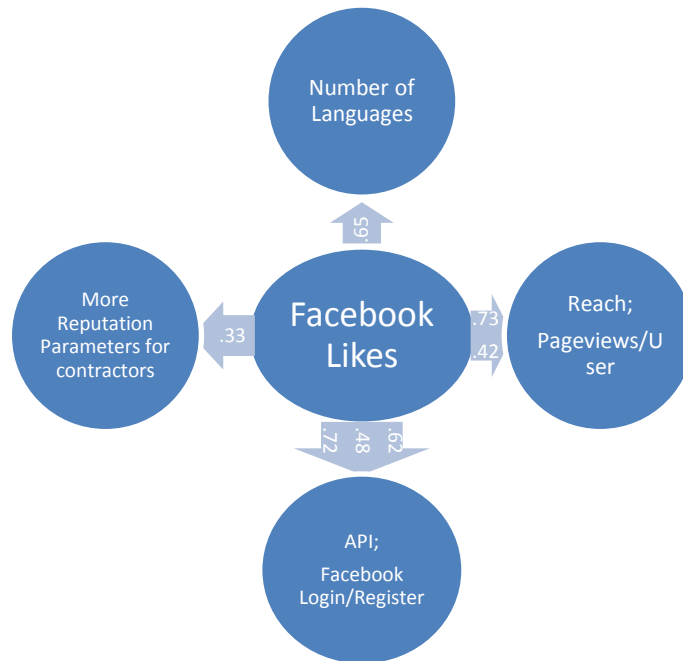


We can observe some interesting parameters that are correlated with a bigger reach, namely the existence of an internal Forum, which creates content and clearly adds value to the platform.

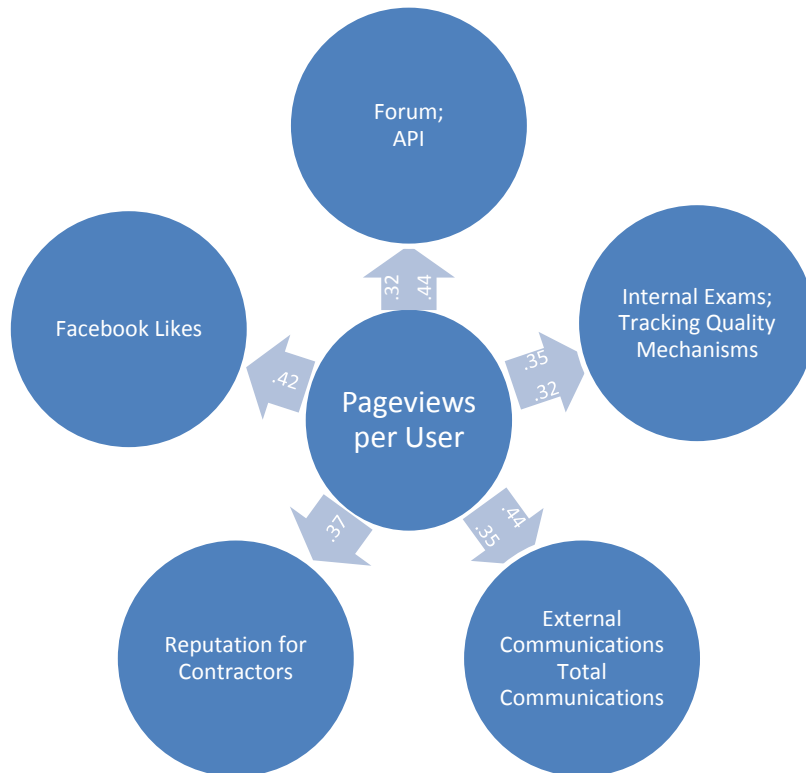


Facebook likes present us with a large number of valid correlations. Among them, Other Languages rather than English stand out. We are observing a “community effect”, where

minorities who work with a non-English language have a tendency to be more united and connected to the cause.



Pageviews per User is the parameter who better defines how committed a user is to the platform, in the sense that a user who navigates through a bigger number of pages is expected to have spent more time online and gain access to more information.



i. Crowd-Labor Platforms' Revenue Model

Crowd-Labor Platform Owners use different combinations of four variables (percentage commissions, advertisement, fix fees and different memberships) as the components of their Revenue Model.

Percentage Commissions are negatively correlated with Advertisement, which shows us that those two combined are the only pair which is not commonly used together by the industry. On the other hand, Different Memberships and Fix fees have a trend to be applied together.

Percentage commissions are the only revenue parameter connected with Microtasks projects, while Simple Projects correlate with Fix fees and Different Memberships. Complex Projects and Macrotasks relate with Different memberships.

Fixed fees are the only revenue source connected with a bigger number of users. They are also associated with other requirements such as Credit Cards and Different Memberships, or the availability of Escrow Accounts.

ii. Open Challenges

Open Challenges are perhaps the most effective marketing strategy Crowd-Labor platforms can implement, being deeply correlated with a bigger number of users registered. But those registered contractors do not contribute in any other way to generate traffic any other performance parameter, which perhaps tells us that these registered users soon turn into inactive soon after the Open Challenge is finished, not generating the initial desired effect for the platform. It can be a powerful tool if combined with incentives for contractors to remain using the platform or with exit barriers for the same contractors.

	Open_challenges
diferent_memberships	,287*
number_registered_users	,716**
Facebook_login	,350*

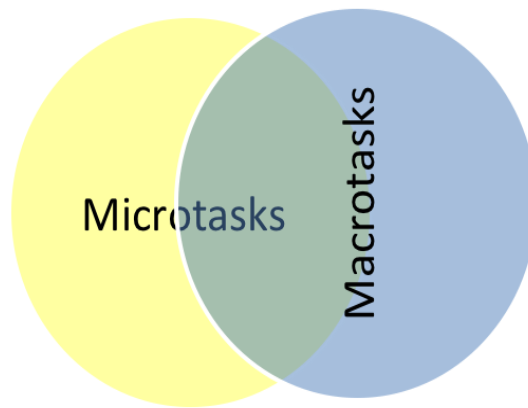
iii. Project type platforms

Regarding the correlations among the types of projects (described above) platforms have, we can observe that some platforms focus only on one of the types, while others operate as a full market for all the types of projects, allowing users to select the ones they are interested in applying. Which means tasks you can do in a couple of minutes with a few clicks or several

months length complex projects (the two ends of the spectrum) can happen in specific CLP or in the same.

An analysis to this spectrum was done based on the availability and number of each project type.

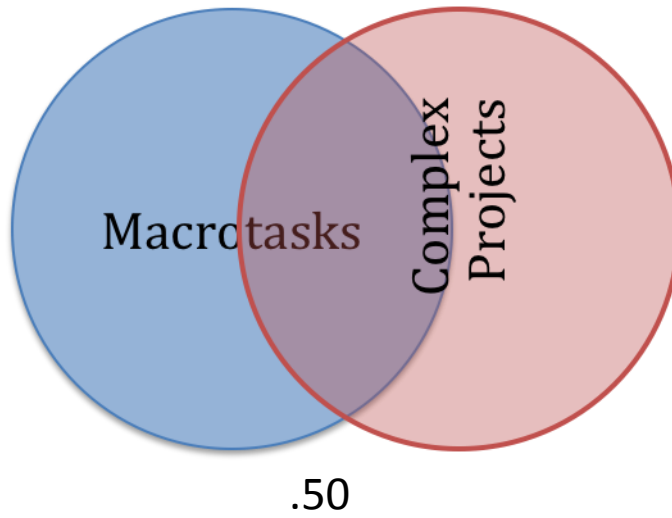
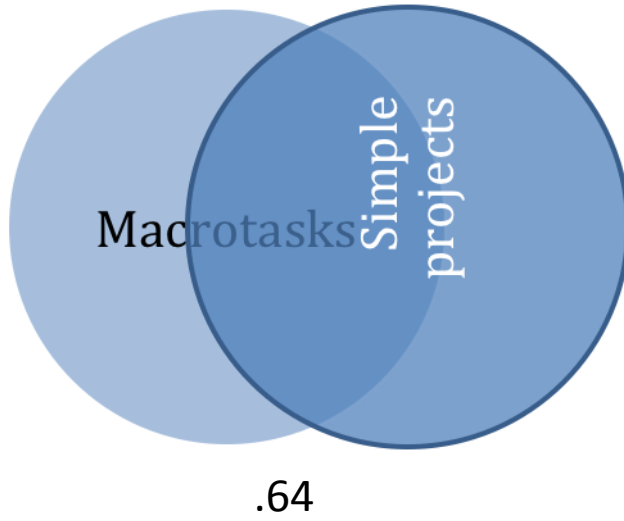
In terms of types of tasks/projects, Microtasks are only correlated with Macrotasks platforms. Microtasks connect with a payment per hour system instead of per output. They are also connected with a percent commission revenue stream for the platform owners.



.44

	Microtasks
percent_comm	,321*
Contractors_credit_card	-,395**
Macrotasks	,435**
Low_skill_level	,534**
Pay_per_hour	,297*

Macrotasks relate with all the three other types of tasks, but more intensely with Simple projects.

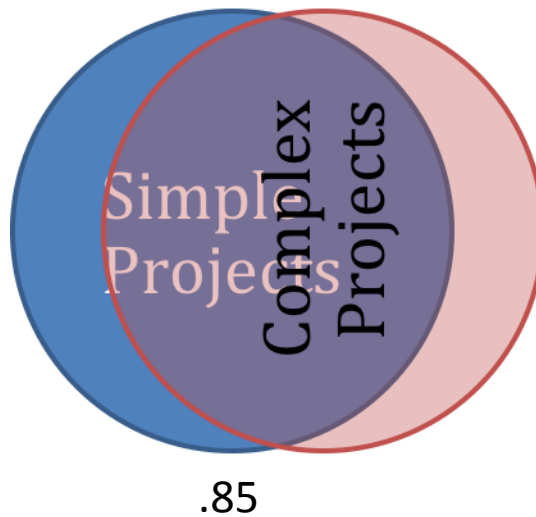


	Macrotasks
Microtasks	,435**
Simple_proj	,636**
Complex_proj	,497**
Pay_only_when_satisfied	-,305*
Hybrid_open_bidding	,327*

Simple and Complex Projects have several correlations in common. As expected, they require medium or high skill levels and there is inexistence of training tools for contractors, because the high complexity of the required training tools makes it hard to develop, at least so far.

Simple projects are the only ones connected with Fix fees.

	Simple_proj
fix_fee	,279*
diferent_memberships	,419**
Macrotasks	,636**
Complex_proj	,850**
medium_skill_level	,673**
high_skill_level	,842**
Training_tools	-,331*
Pay_per_project	,331*
Pay_per_hour	,279*



Regarding the Project Areas (Engineering, Web Programming, Management, etc...) we can observe numerous correlations among these areas, proving the existence of several multidisciplinary platforms. The two areas with more open projects are Web Programming and Web Design/Multimedia.

iv. Payment methods

On the topic of Payment Methods (the way Project Owners pay for the worked projects) there are three alternatives: Paying per Project (fix fee per output); Pay per Hour (variable pay) and Pay per Quality (bonus payments).

Pay per Task	98%
Pay per Hour	29%
Pay per Quality	2%

Paying per output is the industry standard, and bonus payments were found only in one of the platforms.

Pay per project is correlated with the two high skill level types of projects, but project owners usually only pay when satisfied.

	Pay_per_project
Simple_proj	,331*
Complex_proj	,311*
Pay_only_when_satisfied	,286*
open_bidding	,317*

Pay per Hour is correlated with Microtasks, but also with simple projects.

Pay per Hour increases Facebook likes, which seems a good indicator of contractors' satisfaction with the existence of this payment possibility.

	Pay_per_hour
Microtasks	,297*
Simple_proj	,279*

C) Hypothesis testing

After the correlation analysis performed to the platforms characteristics', several of the hypothesis described in the Literature Review proved to be wrong, showing us that the knowledge available about Crowd-Labor Platforms is not consolidated yet, as can be verified by the validation of the premises below.

The red colored lines mean a not verified hypothesis through the correlation analysis, while a green one means it is a hypothesis proven truth¹⁵.

- Number of **Registered Users** is **positively** correlated with:
 - **Reach**
 - **Total number of projects**
 - **Facebook Login & Register**
- **Fix fees and Credit Card Requirements** are **negatively** correlated with **performance**
- **Commitment** is **positively** correlated with:
 - **Internal and External Communication Tools**
 - **Reputation Parameters**
- **Partnerships** are **positively** correlated with:
 - **Number of Users**
 - **Reach**
- **Older platforms** have a **bigger**:
 - **Number of Users**
 - **Reach**
- **Number of Total Projects** is **higher** when there is:
 - **Free Trials**
 - **Pay Only when Satisfied**
- **Microtasks** are **paid mainly by task**
- A platform that **allows Users to post projects and work on other users' projects** is **positively** correlated with a **higher number of projects**

D) Desirable parameters for a maximum performance platform

Given the parameters correlated with Performance, and based on the based on the reasons and correlations detailed above, a Crowd-Labor Platform with the characteristics presented

¹⁵ The hypothesis were tested using a 5% Significance Level.

below incorporated into their business model would have a higher probability of being a successful platform.

Crowd-Labor Platform characteristics more related with performance:

Characteristics	Number of registered Users	Facebook Likes	Reach	Pageviews/User
Forum		.318*	.341*	.317*
API		.623**	.393**	.441**
Open Challenges	.716**			
Facebook Login & Register	.471** & -	.482** & .719**	.494** & .635**	- & .312*
Fix Fees	.364*		.300*	
Leaderboard			.307*	
Multiple Languages	.405*	.645**	.451**	
Internal Exams for contractors to get certifications		.436**		.345*
Tracking Quality Mechanisms (optional)		.482**		.317*
Pay only when satisfied (for Project Owners)			.291*	

E) APIs

API, or Application Program Interface, “is a set of routines, protocols, and tools for building software applications. A good API makes it easier to develop a program by providing all the building blocks. A programmer then puts the blocks together. Most operating environments, such as MS-Windows, provide an API so that programmers can write applications consistent with the operating environment. Although APIs are designed for programmers, they are ultimately good for users.”¹⁶

In Crowd-Labor Platforms APIs are used to link platforms to other platforms, mainly with the purpose of giving users access to projects. This means that a platform can make its projects reach outside the boundaries of its users, connecting with other platforms users, generating a bigger volume and diversity of contractors and projects.

¹⁶ <http://www.webopedia.com/TERM/A/API.html>

The platforms that have an API identified in this study are: Odesk, Freelancer, Elance, Mechanical Turk, Clickworker and Copify, performing a total of 6 out of 51 platforms (11.8%).

Looking at these platforms characteristics, we can observe three high-end project marketplaces (Odesk, Freelancer and Elance), one two Microtasking (Mechanical Turk and Clickworker) and a Specialized Writing Platform (Copify). When looking at these 6 platforms, it is important to have an idea of the number of users who visit them in order to get a sense of the size of these platforms.

Platform	Total Number of Users
Odesk	13.333.909
Freelancer	18.106.045
Elance	10.877.663
Mechanical Turk	982.499
Clickworker	238.607
Copify	73.687

We can see three platforms of large dimension (Odesk, Freelancer and Elance), in fact they are the biggest and more known CLP in the market, a relatively big one (M-Turk, who only focus on Microtasks) and two small ones (Clickworker and Copify).

Statistically, there is a direct correlation between Automation and the performance of a platform. Automation can be defined as the presence of APIs and the presence of Internal Exams for contractors to get certifications characteristic.

We can conclude that APIs are one of the main characteristic that positively differentiate platforms who possess them from those who don't, providing us with a feature that has not been identified before in other researches but that is strongly statistically correlated with several performance characteristics.

Although we cannot conclude if the introduction of automation increases size, or a big size causes automation to be introduced, in order to achieve an efficient business model at a large scale these CLP need to automate some of their processes.

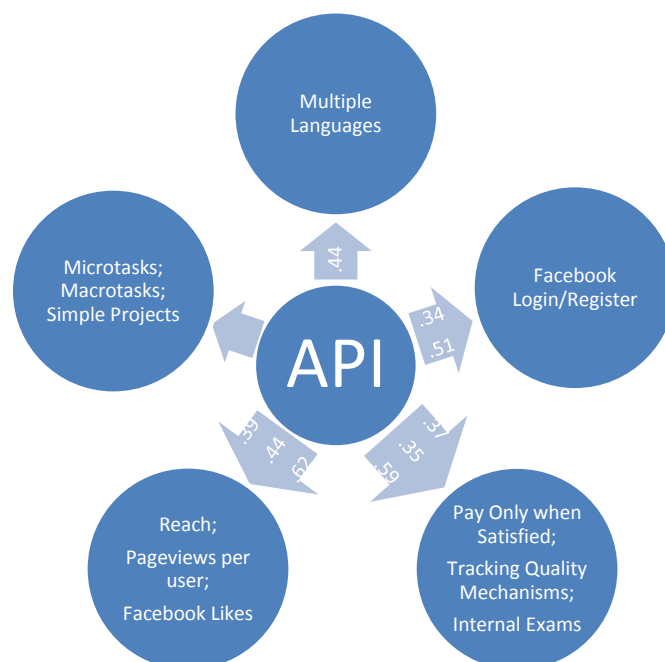
Observing the previous selected parameters, we can observe common characteristics of platforms that use API's.

The two most important requisites in order for automation to be possible are about trust required between platforms and their clients. For them to give a quality guaranteed service to their clients, they have to allow them to only pay when satisfied.

To reduce the number of times they are unsatisfied (and don't pay), Platform Owners bet on Internal Exams that qualify their contractors to become eligible to participate in projects with certain required skills.

Micro task (a few minutes, less than 1 hr)	Macro task (a few hours)	Simple project (a few days)	Complex proj (more than a week)
1	1	1	1
1	1	1	0
1	1	1	1
1	0	0	0
1	0	0	0
1	1	0	0

As we can see, platforms who own APIs predominantly offer projects in the field of Microtasks, but not only. The number of platforms who has other types of tasks/projects decreases as the complexity of available tasks per platform increases, (6 Microtasks, 4 Macrotasks, 3 Simple Proj. and 2 Complex Proj.) confirming that small tasks with lower requirements are easier to connect with other platforms contractors.



It can be concluded that the presence of an API in Crowd-Labor Platforms generates business, in a direct and indirect way. It generates directly through the development of more projects (the platform's main revenue source), and indirectly through advertisement revenues, more brand awareness, the possibility of a third party adding value. APIs essentially make the platform grow, through "outsourcing" and licensing that escalate the business through the possibility of reaching out to other participants, making the platform a bigger player in the market.

F) Automation and the End of Work as we know it

In 1995, Rifkin's "End of Work" book stated that jobs for masses are disappearing at a steady pace, being replaced by automation. This has already happened in the past, in the shift in Agricultural Industry and later in the Manufacturing era. "In the three-quarter mark of the century (19th), the proportion of the national labor force in agriculture had decreased from around three quarters to half; by 1900 to a third, by 1940 to a fifth, today to about 3 percent (in UK)".

These jobs that disappeared in the agriculture caused a workforce displacement into the Industry/Manufacturing Sector, which absorbed workers and grew tremendously fast since the beginning of the 19th century. But over time, the pattern was the same, Men was being replaced by Machine and Automation, which produces more at a lower cost, and consequently requiring a smaller number of employees for the same amount of outputs.

The fast declining of the Manufacturing industry led to another migration, this time for the Services Industry.

Currently, the Services Industry the biggest percentage of the population is employed worldwide, 42%, according to the CIA world fact book¹⁷, but according to Rifkin, not for long.

Besides, Services and Manufacturing are also being Outsourced from Europe and the USA into countries where Labor Arbitrage is doable, like China and India, but that is not the main factor that accounts for the rise of unemployment we are observing at a global scale, Automation is.

And those jobs who were replaced by automated processes are gone for good, because once the machine is more efficient than man, humans cannot keep up with the accelerated evolution of machine performance.

¹⁷ <https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html>

There are several examples of jobs replaced or suppressed by automation in the Services Industry, namely in Banking, where banks are betting on Mobile and Web Solutions that reduce the number of transactions done in the branches, and consequently reducing the number of branches and employees needed. Other example, in the telecommunications markets, phone operators and call center employees are also being complemented with automatic menus that give options to users to change their Tariff membership. Even in Education, Automation is shaping the future with several e-learning/distance learning courses, such as MIT free e-education program¹⁸ or Language learning online tools, such as Roseta Stone.

This new trend where, in certain cases, online markets beat firms, as stated above, will also contribute to a decrease in the number of “traditionally” employed persons, because a large number of firms will hire cheaper online, and on the other hand contractors will be offering their services in Crowd-Labor markets. In normal conditions, and given the past events, it is unavoidable that a new workforce shift will happen. In fact, it is already happening. We observe that 12% of the 51 platforms studied already have automated procedures (through the use of an API, among other processes). These processes can range from the placement of the Tasks by Project Owners, through the access of projects in other platforms Databases that then allows contractors to work on them without being registered in the platform where the project was originally posted. Platforms establish protocols/partnerships to take advantage of other platforms’ workforce, outsourcing tasks required by their clients in an automated process.

This is a major shift in the current way Crowd-Labor Platforms operate. Automatic processes to perform tasks in the Microtasks field are already supported through technology such as UBot¹⁹ but the interesting change is that automation is already happening other more complex types of tasks, showing us that the Automation process is already evolving.

The consequences from this process for the Services Industry are unpredictable in social terms, because we are not witnessing a Creative Destruction paradigm as in the past, where the population relocates their activities to new ones. With the increase of Automation, most of the jobs lost won’t be replaced, leaving us with a large unemployment increase. In CLP particularly,

¹⁸ <http://ocw.mit.edu/index.htm>

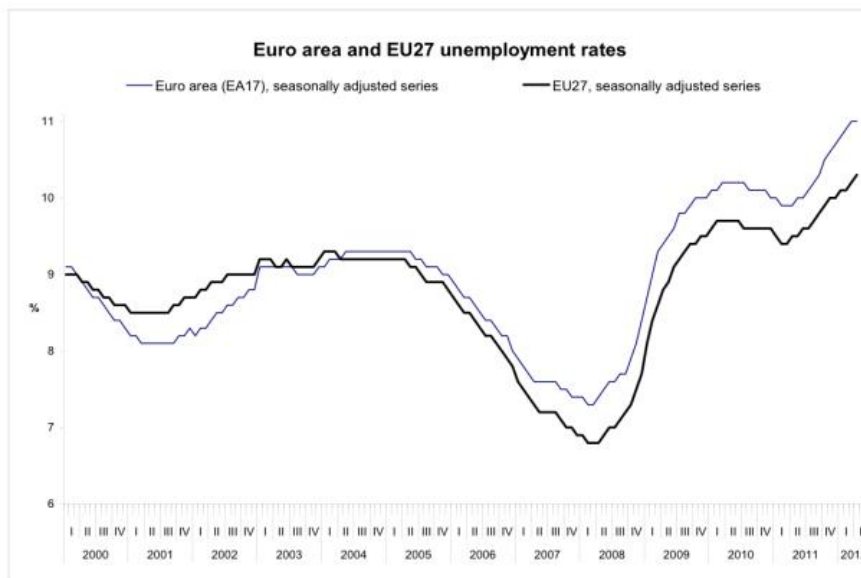
¹⁹ <http://ubotstudio.com/index7>

an increased automation leads to a reduction of the middle management layer, which won't be replaced by anyone but machines. It also means that platforms are becoming more efficient, which is positive for the users who will benefit from lower fees.

To counter this argument, some measures can be undertaken, for example, two hundred years ago, the normal working hours per week was 70 hours, and now it is 40 hours. The trend is that this number will be reduced, to better redistribute the number of jobs and wages across society.

Richness redistribution, a Socialism policy implemented in most developed countries can also be relevant to soften the effects of the high unemployment we are observing and expecting to increase in the services industry.

Figure 2. Euro area and E27 unemployment rates²⁰



In terms of automation's impact on Management, an increase in automated procedures reduces the need of the bottom and middle management layers in terms of absolute number, because fewer decisions need to be made in a decentralized manner. Automation allows the top management to decide specific business criteria to validate or reject procedures that reduce the management workforce need and save money and time to corporations creating value in the medium or long term.

²⁰ <https://rwer.wordpress.com/2012/06/06/euro-area-and-e27-unemployment-rates/#more-8661>

G) Limitations

This study has the limitation that some of the answers to the characteristics used to analyze the Crowd-Labor Platforms were not made public by the platform owners, which didn't make possible to capture the full picture of some of these platforms, but by studying a large number (51) of platforms, the collected data offers statistical evidence in the form of correlations that are statistically significant, and consequently, support the conclusions drawn from the analysis.

5. Conclusions

This thesis has covered the Crowdsourcing fundamentals, focusing on the current state of the Crowd-Labor Industry, its benchmarks, users' motivations and a fact based opinion regarding its future, creating new knowledge that could be particularly useful for researchers, academics, crowdsourcing initiative owners, Crowd-Labor users, entrepreneurs and investors.

Crowdsourcing is here to stay. The industry is expected to continue to grow steadily and rapidly in the next years based on a growing number of Internet users and the rising of the quality of this communication channel around the world, especially in developing countries, allow labor arbitrage opportunities for Project Owners. Besides, the decrease of Internet costs we are expected to continue to have based on Moore's Law all increase the number of potential interested crowdsourcing users.

Online based Learning tools such as e-learning videos or free online courses, certifications and exercises allow the self-development of the knowledge of hundreds of thousands of users who can now add more value to companies and earn bigger payments for their work. The mass production of knowledge easily available for free over the web allows users to learn about each specific topic they need or want.

Automations on top of the present automations will reduce the number of jobs, and unemployed persons may turn to CLP as a revenue source.

Young unemployment is a serious issue in several European countries, but this young and educated workforce is more comfortable with technology, web transactions and social networks, so they are even more likely to turn to crowdsourcing plans.

The emergence of better, cheaper and easier to use tools reduce the difference in terms of quality between professionals and amateurs/hobbyists work, which increases the number of people offering their services in Project Marketplaces in CLP.

Companies will also be more prepared and used to outsource services online, so the Offer of Crowd-Labor projects will also keep up the growth of registered users.

On the other hand, there are still some Ethical and Law concerns that limit the potential of crowdsourcing and that should be addressed by governments and global entities. Regarding the ethical concerns, some argue that it is not fair to pay few dollars per hour to someone working for you, but on my opinion, if that person self-selected itself to participate it is

because that project is better than the other alternatives available, and a self-regulated market is the most efficient one.

About the Law constraints, in most European countries a minimum wage for someone working a certain number of hours a week is mandatory, and such doesn't happen in crowdsourcing, which creates a grey area that could lead to some law suits to Crowdsourcing corporations. But legislators and governments are slowly realizing the potential of crowdsourcing initiatives and their importance and countries like Italy for example are now creating legislation to protect these transactions and the people involved in them.²¹

To finalize, the scope of the platforms analyzed was large, the analysis deep and iterative which led to interesting results and in some cases different than the expected, which overall made me feel satisfied with the final output and the realization of this project. I hope that this information and investigation may be useful to increase the knowledge available regarding this contemporaneous industry, and for the next person who may find this thesis to consult and build upon.

A) Future Research

The ethical and legislation issues discussed above require further attention. These are in a certain way connected, since ethics is the basis from which the legislation is then formalized and enforced²².

There remain questions about the ownership of the intellectual property of the work done through crowdsourcing. Ross Dawson, author of "Getting results from crowds" mentioned "questions over intellectual property rights and which party should have ownership of the resulting content or product built. At the moment, most companies that engage in crowdsourcing have a contract with participants which gives Intellectual Property rights to the company, while in some contracts, certain users are able to retain IP rights." Besides, there are questions related to the minimum wage, which is mandatory in most countries, and cannot be guaranteed through many crowdsourcing platforms that pay per task and do not have the tools to check and guarantee those procedures.

²¹ <http://www.crowdsourcing.org/article/crowdfunding-legalized-in-italy/19952>

²² <http://www.zdnet.com/crowdsourcing-faces-ethical-legal-risks-7000016300/>

Besides, there are questions as to the payment of social security taxes in each country, as most of the platforms do not control and inform each government regarding the work of its contractors.

But governments are starting to realize that this new industry requires a new specific legal framework, which has already led some countries do develop laws to deal with the lack of regulation in this market, such as Finland, who issued a “Crowdsourced copyright law”²³ or Italy, which has developed an “Equity-based crowdfunding”²⁴ legislation. It is expected that several countries or international regulation institutions will define new laws to protect the interests contractors, project owners and the governments over the next few years.

²³ <http://torrentfreak.com/finland-writes-history-with-crowdsourced-copyright-law-130722/>

²⁴ <http://twintangibles.co.uk/equity-based-crowdfunding-is-now-legal-in-italy/>

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7. Annex

A) Annex 1. Analyzed characteristics for each platform

What does it analyze	Parameter's Name	Description	Scale
Platform	Name	Platform's name	String
Platform	URL	Platform's URL	String
Platform	ID	Platform's Identification Number	Numeric
Platform	Revenue model- Percentage fees	Existence or not of percentage fees	Binary
Platform	Revenue model- fix fees	Existence or not of fix fee per project or memberships fix fees	Binary
Platform	Revenue Model- Advertisement	Existence or not of Advertisement in the platform	Binary
Platform	Revenue Model- different Memberships	Existence or not of different memberships available for contractors and Project owners (free and/or not)	Binary
Platform	Languages- English	Is the platform available in English?	Binary
Platform	Languages- Spanish	Is the platform available in Spanish?	Binary
Platform	Languages- German	Is the platform available in German?	Binary
Platform	Languages- Portuguese	Is the platform available in Portuguese?	Binary
Platform	Languages- French	Is the platform available in French?	Binary
Platform	Languages- Other Languages	Is the platform available in Other languages? State which	String
Platform	Start date	Platform's Start Date	Date
Platform	Country of origin	Platform's Country of origin	String
Platform	Number of registered contractors	How many contractors (people working on projects) are registered in the platform?	Numeric
Platform	API	Existence of API in the platform	Binary
Platform	Partnerships	Does the platform have any Partnerships with external entities)?	Binary
Platform	Partnerships	(if yes, with whom?)	String
Platform	Internal Communications- Amongst contractors	Can contractors communicate between themselves in the platform?	Binary
Platform	Internal Communications- Amongst project owners	Can project owners communicate among themselves?	Binary
Platform	Internal Communications- between contractor and project owner	Can contractors and project owners communicate?	Binary
Platform	Internal Communications- between users and platform owners	Can users and platform owners communicate?	Binary

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What does it analyze	Parameter's Name	Description	Scale
Platform	Internal Communications-Forum	Existence of a forum	Binary
Platform	Internal Communications-Others	Is there other internal communication tool?	String
Platform	External Communications- Social Networks	Does the platform use more than one social network?	Binary
Platform	External Communications-Facebook page	Does it have a Facebook page	Binary
Platform	External Communications-Other	Other External communication tools	String
Users	Login with Facebook	Can users login using Facebook/Google+ plug-in?	Binary
Users	Register with Facebook	Can users register using Facebook/Google+ plug-in?	Binary
Users	Proprietary login registration	Can users register in the platform proprietary page?	Binary
Platform	Other embedded initiatives	Does the platform have any initiative? (e.g.: open challenges)	Binary
Platform	Other embedded initiatives	(if yes, which?)	String
Users	Contractor & Project owner	In the same account, can you post jobs and work?	Binary
Contractors	Registration process-Information	How much information required - how much information is needed to register comparing with other platforms	Scale from (1 to 5)
Contractors	Credit card requirement	Is there a credit card requirement for contractors to use the platform?	Binary
Contractors	Paypal or bank account requirements	Is there a Paypal/Bank Account requirement for Contractors to use the platform?	Binary
Project Owners	Registration process-Information	How much information required - how much information is needed to register comparing with other platforms	Scale from (1 to 5)
Project Owners	Credit card requirement	Is there a credit card requirement for Proj.Owners to use the platform?	Binary
Project Owners	Paypal or bank account requirements	Is there a Paypal/Bank Account requirement for Proj. Owners to use the platform?	Binary
Project type	Micro task (a few minutes)	Tasks that can be made in a few minutes	Binary + Percent
Projects type	Macro task (a few hours)	Tasks that can be made in a few hours	Binary + Percent
Projects type	Simple project (a few days)	Tasks that can be made in a few days	Binary + Percent
Projects type	Complex proj (more than a week)	Tasks that are made in more than a week	Binary + Percent

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What does it analyze	Parameter's Name	Description	Scale
Project Categories	Engineering & Manufacturing	Number of Projects in the Category	Numeric
Project Categories	Custom Development & Web Programming	Number of Projects in the Category	Numeric
Project Categories	Design, Graphics & Multi-Media	Number of Projects in the Category	Numeric
Project Categories	Writing / Translation / Transcription	Number of Projects in the Category	Numeric
Project Categories	Content Review & Data Management	Number of Projects in the Category	Numeric
Project Categories	Information Search, Research, & Categorization	Number of Projects in the Category	Numeric
Project Categories	Finance, Management & Legal	Number of Projects in the Category	Numeric
Project Categories	Sales & Marketing	Number of Projects in the Category	Numeric
Project Categories	Other	Number of Projects in the Category	Numeric
Project Categories	Total	Total number of Open projects	Numeric
Contractors	Skill level Low	Elementary school skills are enough (e.g. errands and Microtasks)	Binary
Contractors	Skill level Medium	Specialized skill that normal schooling does not provide, but no specialization required. (e.g. website development)	Binary
Contractors	Skill level high	Specialized education required, such as higher University training (e.g. InnoCentive Challenge)	Binary
Contractors	Training Tools to develop new skills	Do Contractors have access to training tools to acquire skills?	Binary
Contractors	Reputation-Completion Rate	Is there information about a Contractor's past work?	Binary
Contractors	Reputation-Star Ratings	Are there Star Ratings evaluations made from the Project Owners on a Contractor's work?	Binary
Contractors	Reputation- Written Comments	Are there Written comments from others (endorsements)?	Binary
Contractors	Reputation- Leaderboard	Is there a Leader Board?	Binary
Contractors	Reputation- Leaderboard	If there is one, which metrics are used?	String
Contractors	Internal Exams	Are there Internal Exams for contractors to have certifications?	Binary
Project Owners	Payment method-Pay Per Task	Do Project Owners Pay per job/task/project [fixed pay]?	Binary
Project Owners	Payment method- Pay per Hour	Do Project Owners Pay per hour [variable pay]?	Binary

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What does it analyze	Parameter's Name	Description	Scale
Project Owners	Payment method-Pay per Quality	Do Project Owners Pay per quality [bonus pay]?	Binary
Project Owners	Pay only when satisfied	Do Project Owners only pay when satisfied (or when approve the review)?	Binary
Project Owners	Payment process	Escrow account	Binary
Project Owners	Anonymity	Project Owner's are anonymous, or can you get details about them?	Binary
Project Owners	Free trials	Are there free trials for Project Owners to try the platform?	Binary
Project Owners	Tracking quality mechanisms	Can project owners see workers work?(yes/no)	Binary
Project Owners	Tracking quality mechanisms	If yes, how?	String
Project Owners	Reputation- Previous Jobs Proj Own	Is there information about the number of previous jobs	Binary
Project Owners	Reputation-Star Ratings Proj Own	Are there Star Ratings?	Binary
Project Owners	Reputation-Written Comments Proj Owners	Are there Written comments from others (endorsements)?	Binary
Project Matching Process	Contractor chooses project	Contractor chooses project (open bidding)	Binary
Project Matching Process	Project Owner chooses contractor	Project Owner chooses contractor (by invitation)	Binary
Project Matching Process	Hybrid open bidding	Hybrid open bidding followed by invitation from owner	Binary
Platform	Global Traffic Rank	Rank of the Website in terms of the most seen on the web	Numeric (inverse scale)
Platform	Sites linking in	Number of Sites Linking In	Numeric
Platform	Facebook Likes	Number of Facebook Likes in the Corporate page	Numeric
Platform	Reach %	Estimated percentage of global internet users who visit the website	Percent
Platform	Pageviews %	Estimated percentage of global pageviews on the website	Percent
Platform	Pageviews/User	Estimated daily unique pageviews per user for the website	Numeric
Platform	Total Number of Users	The total number of users visiting a platform	"Reach %" * "Estimated Nr of Users"
Platform	Total Number of PageViews	The total number of pageviews a platform receives	"Total Nr of Users"* "Pageviews per User"

B) Annex 2. Analyzed platforms

#	Platform's Name	Url	Description
1	Odesk	www.odesk.com	Project Marketplace
2	Freelancer	www.freelancer.com	Project Marketplace
3	E lance	www.elance.com	Project Marketplace
4	Mechanical Turk	www.mturk.com	Microtasking
5	Guru	www.guru.com	Project Marketplace
6	10EQS	www.10eqs.com	Simple project marketplace
7	Acabiz	www.acabiz.com	Project Marketplace
8	Bizreef	www.bizreef.com	Project Marketplace
9	Clickworker	www.clickworker.com	Simple project marketplace
10	Codeur	www.codeur.com	Specific project marketplace
11	Copify	www.copify.com	Specific project marketplace
12	Crowdcontent	crowdcontent.com	Specific project marketplace
13	Freelancefree	www.freelancefree.com	Simple project marketplace
14	Geekfreelancers	www.geekfreelancers.com	Links to other platforms' projects
15	Greatlance	www.greatlance.com	Project Marketplace
16	iFreelance	http://www.ifreelance.com/	Project Marketplace
17	Project4hire	http://www.project4hire.com/	Project Marketplace
18	Rentacoder	www.rent-acoder.com	Specific project marketplace
19	Witmart	www.witmart.com	Project Marketplace
20	Vworker	http://www.vworker.com/	Project Marketplace
21	Twago	www.twago.com	Project Marketplace
22	Trabajofreelance	http://www.trabajofreelance.com/	Project Marketplace
23	appen	appen.co.au	Simple project marketplace
24	Freelancejobs	http://www.freelancejobs.org/	Project Marketplace
25	Crowdspring	http://www.crowdspring.com/	Project Marketplace
26	BLUR group	www.blurgroup.com	Specific Project Marketplace
27	Trabalholivre	www.trabalholivre.com	Project Marketplace
28	Freelancenow	www.freelancenow.com.br	Project Marketplace
29	Redefreelancer	http://redefreelancer.net/	Project Marketplace
30	Serebra Connect	http://serebraconnect.com	Project Marketplace
31	People Per Hour	http://www.peopleperhour.com/	Project Marketplace
32	ProjectSpring	www.projectspring.com	Project Marketplace
33	Freelancer Portugal	http://www.freelancer-portugal.com/	Project Marketplace
34	Freelancers	http://www.freelancers.net/	Project Marketplace
35	Short task	http://www.shorttask.com	Microtasking
36	Fiverr	http://fiverr.com/	Microtasking
37	Bfirm	www.bfirm.in	Project Marketplace
38	Work and Hire	www.workandhire.com	Project Marketplace
39	LanceEarner	www.lanceearner.com	Project Marketplace

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40	Signup workers	signupworkers.com	Microtasking
41	Neoo Freelancer	http://neofreelancer.com/	Project Marketplace
42	Earn Lancer	http://www.earnlancer.com	Project Marketplace
43	Programming Bids	http://rfq.programmingbids.com/	Specific project marketplace
44	Freelancer piazza	http://freelancerpiazza.com	Project Marketplace
45	Freelancer zone	www.freelancerzone.com	Project Marketplace
46	Freelance.com	www.freelance.com	Project Marketplace
47	Freelance switch	freelanceswitch.com	Project Marketplace
48	TaskCity	www.taskcity.com	Project Marketplace
49	Freelanced	www.freelanced.com	Project Marketplace
50	Freelance People	www.freelancepeople.co.uk	Project Marketplace
51	Joomlancers	http://www.joomlancers.com/	Project Marketplace

C) Annex 3. API platforms common characteristics

Of the six identified platforms with API, we can observe some relevant common features, such as:

- All of them have a Percentage Commission Revenue Model;
- 3 have a forum;
- All have Facebook corporate page and social network enablement;
- 3 have Facebook login, and 4 have Facebook register;
- 3 allow users to be a project owner and a contractor in the same account;
- 5 allow internal exams
- All pay contractors per task
- All allow project owners to only pay when satisfied;

Glossary

Automation: The presence of APIs and of Internal Exams for contractors to get certifications. It means the existence of scalable automated functions that create value for platforms.

Contractor: a user that self-selects himself to participate in crowdsourcing tasks/projects.

Commitment: details how deeply users are participating in the platform. The best way to measure commitment is through the daily “Pageviews per user” and Facebook likes.

Commoditization of services: “the process by which goods that have economic value and are distinguishable in terms of attributes (uniqueness or brand) end up becoming simple commodities in the eyes of the market or consumers.”²⁵

Crowdsourcing: “a process that involves outsourcing tasks to a distributed group of people”, Jeff Howe

Crowd-Labor: “Leveraging of a distributed virtual labor pool, available on-demand to fulfill a range of tasks from simple to complex. Crowdsourcing is used to connect labor demand and supply. Virtual workers perform activities that range from simple to specialized tasks”²⁶.

Microtasking¹: Platforms where only Microtasks (small easy granular tasks) are available for Contractors to complete;

Project Owner: Individual person or entity that posts tasks/projects in Crowd-Labor platforms. They pay the contractors for their effort and, in several platforms, a percentage commission to the platform owners.

Project Marketplace: crowdsourcing platforms where two types of users participate, Project Owners and Contractors. Project Owners post tasks or projects, and the information related to them, such as their detailed description, technical requirements, the payment, among others. On the other side of the platform are the Contractors, which are the users who bid to participate and win the participation on the project.

Reach: The number of people who visit a Crowd-Labor platform “the number of people who participate in the sharing of that information”.

Simple Project Marketplace: Platforms where only Macrotasks and Simple projects can be found;

²⁵ <http://en.wikipedia.org/wiki/Commoditization>

²⁶ <http://www.crowdsourcing.org/community/cloud-labor/6>

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Specific Project Marketplace: Platforms where there is specialization of tasks. For example, certain platforms only have projects for Programmers, or Marketing Related. Tends to present only Simple and Complex Projects.

User: every individual person or entity that uses Crowd-Labor platforms. Includes Contractors and Project Owners.