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The Human Cloud in China: An Early Inquiry and Analysis

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Introduction

Human Cloud (HC) is an internet-enabled business innovation (HC is similar to the more common term, crowdsourcing; both of these terms are defined below). HC is growing rapidly in American and Europe. Separately—and away from the radar screen— HC is also growing very rapidly in China, primarily in Chinese language websites. Like its western counterparts, Chinese HC is also in its early stages. For example, the first Chinese Witkey and Crowdsourcing Conference was held in Guangzhou China in 2010. The three major HC platforms in China are Zhubajie, epweike and TaskCN, each with *millions* of workers.

In this paper we examine the current HC industry in China and compare it with the western HC industry. We are seeking to understand the limitations of Chinese HC growth -- and the comparison helps sharpen this inquiry. We begin with an overview of the academic literature and the latest industry statistics, including data from the key Chinese HC platforms. Our methodology focused on exploring this new terrain: we examined the platforms and culled data from their published statistics and from studying their processes; we went through the process of placing work or bids; we examined secondary sources, such as user discussions about these platforms; we visited news sites, and we had some opportunistic email communication with sellers.

Two key conceptual issues are identified from our analysis: First, task types are quite different in the Chinese HC. Second, trust/fraud issues drive many of the differences in Chinese HC versus western HC. We then propose a theoretical model for further study.

Literature and Industry Overview

Terms-- and their definitions-- change rapidly in this new field. The more common English term, crowdsourcing is defined as: “enlists a crowd of humans to help solve a problem defined by the system owners” (Doan et al 2011).

We define the Human Cloud as *a sourcing ecosystem that engages a pool of online workers, or suppliers, that can be tapped on-demand to provide a wide range of services to any interested buyer*. There is no source that we are aware of that defines HC crisply, so building on its common usage in industry we presented our definition (note that Quinn and Bederson (2010) have established a more macro topology of the HC space). We chose to use the HC term rather than the more common crowdsourcing term for two reasons: first, it is more descriptive, since it denotes the engagement of human resources; second, we have heard from decision makers in the HC platforms that the crowdsourcing term is problematic, limiting, and misleading. Our interest is in the subset of HC that involves payment (at least in most cases) rather than the voluntary (e.g., Wikipedia) and ideation efforts (e.g., IBM's innovation jam).

The HC platforms are dominated by the American firms at this early evolutionary stage and they still set the tone: Amazon's Mechanical Turk, eLance, Innocentive, oDesk and others are American. We will review the American sites first.¹

American platforms can be grouped into three types of models: tender, competition, and engagement. The most common model in the American sites is of a strong intermediary, or platform, and is the *tender model* of commerce. In the tender model a buyer posts a task on the platform then sellers bid on the task in a reverse auction bidding process (Dans 2002). The buyer selects the seller. The seller completes the task. On completion, the platform takes the commission.

Several platforms such as TopCoder, Innocentive, 99Designs make use of a *competition model* where the sellers are required to complete some/all of the task to participate/ compete. The buyer then gets to choose, not the best/lowest bidder, but the best product/solution. The third model is the *engagement* model in which workers are hired on an hourly basis. LiveOps often uses this approach to hire virtual call center agents on-demand. In sourcing parlance this is called staff augmentation. We summarize the three transaction models:

- Tender: Buyer picks Seller before project begins. Buyer pays Seller on project completion
- Competition: Seller prepares some/all the work and competes with others. Buyer chooses the best work. Buyer pays the winner and may pay others, as well.
- Engagement: Buyer hires multiple sellers (individuals) often by the hour, to perform work. Platform manages the human resource issues.

Previous Research on Chinese HC

Shao et al (2012) conducted an analysis of Chinese platforms and sellers. They point out the following differences from the American model:

- Country of origin. In Chinese websites, nearly all participants are from within China due to the language barriers.²

¹ We note important non-American western sites. Microworkers in Germany. Microtask in Finland; Freelancer.com in Australia;

² The interesting question of HK and Taiwan participation is not known.

- Transaction models. Chinese platforms mainly use the competition model whereas the American model is primarily tender.
- Task types. American platforms have a much broader range of tasks. The Chinese websites usually contain projects that are more related to daily life. Whereas the American eLance has four major project categories that do not appear on Zhubajie: management support, engineering and manufacturing, financial management. Zhubajie contains culturally relevant tasks that do not appear in eLance: birthday messages to friends and novel gift ideas.

While Shao et al. indicate that most of the American platforms use the tender model, this is somewhat misleading since much of the innovation is taking place in the competition and engagement models.

Separately, the authors also note issue of sellers' public information. Solvers' (sellers) information is public in China whereas in the American model bidders' information is open only to the buyer. When sellers can view their competition this can prevent some manipulative competitions and sellers can also consider whether to participate by viewing other solvers' abilities.

Survey of current leading Chinese Human Cloud platforms

We examined three of the largest Chinese platforms: Zhubajie, epweike, taskCN. Specifically, we analyzed their business models and the platform characteristics. At the outset we note these platforms are growing rapidly in all measured dimensions. We found that the business models are often different than described on their websites (we discovered this when we entered a task for bidding). Multiple dimensions of size and growth of the Chinese HC platforms are presented in Table 1.

Table 1: Comparison of platforms size and scale

	Total Projects		Total sellers		Sellers that earned money		Total Value (RMB)	
	2/2012	7/2012	2/2012	7/2012	2/2012	7/2012	2/2012	7/2012
Zhubajie	599,457	875,845	6,126,454	7,197,164	N/A	N/A	724,073,072	1,045,480,263
epweike	26,434	54,365	1,537,576	2,977,734	N/A	N/A	60,665,294	126,961,634
taskCN	46,971	49,854	3,102,512	3,207,482	254,043	259,291	32,102,221	33,571,577
K68.cn	18,489	19,108	2,283,861	2,327,254	14,911	15,245	6,295,838	6,453,246
vikecn	64,583	79,975	2,338,833	2,499,645	N/A	N/A	19,950,463	23,820,369

Zhubajie

Zhubajie is the dominant HC platform with close to 7 million sellers listed—an incredible large number, even if only about 5% of these area active sellers that have earned some money on the site. The majority of projects are small: 80% are below 500 RMB (~USD 78). The platform has

overseen USD 150 million of business, a scale that compares favorably with the major American platforms. Exhibit 1 illustrates some tasks from the site.

EXAMPLE 1:

I have more than 100 acres of fertile land about 10km away from downtown. I would like to build an organic farm to raise sows and small wild boars. I would also like to have catering and accommodation to host tourists. I am sincerely seeking experts for business planning and designs. Experience with similar business cases is preferred. A visit to the land is required. Please contact me at 15 936 513 676, Mr. Chang.

<http://task.zhubajie.com/1363591/>

EXAMPLE 2:

Write ERP program for supermarket chains. The functionalities should be similar to Business Start v7 of SSIS (a popular ERP software in China). Client/Server architecture is required. Please submit your quote if you are up for the project.

<http://task.zhubajie.com/1368657/>

Exhibit 1: Sample tasks from Zhubajie (translated by authors)

At Zhubajie the core business model is the competition model: Before submitting tasks, buyers would decide how many sellers will be paid and the percentage for each of them based on the ranking. Then the sellers are required to complete the entire task. After the bid is selected and the deal is complete, the website takes the 20% commission from the sellers.

Zhubajie also provides premium service for the buyers in the competition model. Buyers can pay 58 RMB/day to have the tasks promoted by the website, such as posting it on the homepage. For those buyers who want more privacy, they can choose to pay 50RMB per task to have the task be masked hence become unsearchable by Google or Baidu (the largest search engine in China).

Besides the basic transaction model, at Zhubajie, there are two other models: Quick Match and bidding, which are two different types of *tender*. Quick match requires the buyers and sellers pay a 99 RMB deposit to show their commitment for the deal. The website helps the buyers and sellers to find good matches. This model makes it much easier for buyers to find sellers that match the task requirements, and hold them accountable because of the deposit. Using Quick Match, sellers are more likely to win a bid that matches their skillsets and less likely to get fake tasks (explained further below). This model also protects the privacy of both buyers and sellers. Buyers can also choose the bidding model where the sellers post their quotation; then the buyers choose a single seller for individual tasks.

Zhubajie set some of the tasks as a special type called “Challenge” as an incentive to sellers. The challenge tasks are marked with either “double capability points” or “90% of the price”. Completing a “double capability points” task will help the sellers to boost their rankings while completing a “90% of the price” will make them earn more (regular tasks are 80%).

With its dominance in the market, Zhubajie was once able to impose an unbalanced model that is tilted heavily in favor of the buyers and the platform. For each task, only one seller usually got paid, all the others invested time with no compensation. However, as the competition in the HC

market increases, Zhubajie faces the challenges, especially from Epweike. In response, Zhubajie has changed its competition model to enable buyers to compensate more than one seller for each task.

Zhubajie has recently seen investment by prominent venture capitalists, and now has an English language website, witmart.com, based in Houston, Texas. This website allows users in English-speaking countries to post work which can be performed by qualified workers in China.

epweike

The second largest Chinese platform epweike has been trying to gain competitive advantage by introducing a new business model. As a reaction to Zhubajie, it removed commissions, which were prominent in the HC market. Instead, it charges a membership fee to the sellers. The annual membership ranges from 2,000 RMB to 20,000 RMB.

epweike also focuses on promoting the tender model instead of the competition model. Its tender model includes a “Direct Hire” option. It enables buyers to directly hire a seller without going through the competition process. Except for small tasks such as graphic designs, buyers usually find it difficult to find good solutions, because sellers are hesitant to compete for a larger task because of the possibility of not getting paid. With the “Direct Hire”, buyers are able to find a single seller to commit to the project.

Another option for tender is the Same City Matchmaking. When using this option, the Buyers will see results of local talent first; sellers will be notified with the newly posted projects that match the city and work type settings. This option has received positive feedback based on the comments on the website and other news resources.

For the competition model, epweike first diversified it into three categories.

- Full payment - if there is a seller who wins the competition, then this seller will get the full payment of the price
- 30% down payment - if there is a seller who wins the competition then this seller will get the full payment; if no one wins the competition, 30% of the price will be paid evenly to the earliest 10 bidders.
- Zero down payment - if there is a seller who wins the competition then this seller will get the full payment; if no one wins the competition, the buyer will not pay anything.

This diversified model met the need of the market quite well when it was introduced at the end of 2010 because some new buyers who are looking for services online that were not comfortable to just hire someone online.

In 2012, epweike changed its competition model to become similar to that of Zhubajie, though not as flexible. The buyers have to commit the full payment to the seller(s). A buyer can choose to pay 90% of the full price to (up to 5) winners. The other 10% of the price will be distributed evenly to another 2~5 sellers who submitted next-to-winning work.

TaskCN

TaskCN was founded in Beijing in early 2006. It uses different transaction models with different task types:

- Competition -- Logo design, writing/naming, translation, etc.
- Bidding (tender) -- website design, programming
- Pay-by-quantity -- posting advertisements
- Direct hire (tender) -- any task where sellers are identified.

Despite the increasing competition in the Chinese HC market in 2012, we have not observed many changes at TaskCN. Neither the website nor the transaction model changed. On the home page, the layout remains the same while its top competitors Zhubajie and Epweike have both undergone revamps. Even the seller testimonials on the homepage are the same as 2011 when we began examining these sites.

The VIP seller service is the only new move at TaskCN. After registering and paying for the VIP service, sellers are able to see the contact information of buyers so they can contact them directly. VIP sellers have exclusive right to bid on high priced tasks and can be recommended to buyers by the platform. However, the sellers still have to pay 19% of the task price to the platform as commission, while regular sellers pay 20%.

Comparison of Transaction Models and other Features

We present a comparison of the key models in Table 2.

	Key transaction model	Platform business model
Zhubajie	Mostly competition	20% commission from sellers (10% for challenge tasks)
epweike	Mostly tender	Membership fee
taskCN	Competition and tender	20% commission from sellers 19% from VIP sellers

Table 2: Comparison of transaction and business models.

In general, we see a convergence of transaction models among the three top Chinese HC platforms. The platforms began with rather different transaction models and have somewhat converged recently. The business model of Zhubajie and TaskCN are quite similar, they make a profit by charging commission from the sellers, while Epweike's revenue comes from membership fee.

Pricing and Educating Users

The pricing strategy on the Chinese HC platforms has some differences from the American counterparts. Most of the Chinese tasks are fixed price, while there is a gradual move to hourly payments in the American sites. Epweike does have some hourly rate tasks; TaskCN has tasks that are paid by quantity.

Regarding education: HC is still quite a novelty all over the world. The pioneering platforms –

whether American or Chinese -- have the burden to educate the first generation of users. At Zhubajie and TaskCN there are detailed illustrations with snapshots to guide the users, including each step of all the transaction models. Zhubajie has published books describing how small businesses can utilize HC. It also has help centers to answer questions for new users. We note that even though we found epweike to be the more innovative player in the market, surprisingly, it has little educational content-- only a FAQ section.

Chinese HC Task Types

The types of work tasks on the Chinese platforms are quite different from their counterparts in the US. From the February 2012 statistics on Zhubajie, the top three types of work, based on number of projects, are:

1. Design, 265,416
2. Online sales/marketing, 159,021
3. Writing/Naming. 66,630

We extend the work of Shao et al by describing interesting differences in task type. Shao describes the tasks that Chinese platforms perform as relating to “daily life.” We suggest that two characteristics are better at differentiating the task types. First, they are smaller than those found in American sites. Second, is that more of them are Business-to-Consumer (B2C) rather than B2B (Business-to-Business). which is the dominant relationship in American platforms.

Design

Design work includes logo design, package design, website design. The booming online design business stems from two reasons. First, most design workers are freelancers and HC platforms are optimal matchmaking sites for designers, just as they are on the American HC sites. Second, in China, design skills are among the most common skill sets for those who did not get a degree from a reputable college and many young people acquired design skills through self learning.

Online sales/marketing

Online sales/marketing includes posting advertisements on QQ (the popular Chinese IM service), groups, forums, blogs, microblogs, and sales rep work at online stores. The large amount of business in this area is credited to the marketing paradigm in China and the booming of Taobao, the equivalent of eBay in China.

The fast-growing internet population in China uses QQ and other online forums extensively, so the marketers cannot overlook this channel. Since there a huge number of QQ groups and forums, coverage is the key. Hence the big demand for the online marketing work.

Taobao has grown its business dramatically in recent years. The main difference it has from eBay is, besides prices, that most of the sellers compete on service quality, namely, being responsive to customers thru IM. Delays in response to inquiries are usually regarded as bad

service and would drive the buyers away. Therefore, many online stores hire sales representatives to work shifts to serve the customers.

Writing/Naming

Writing/Naming is a category that is quite unique to the Chinese culture. Writing services include business documents, business plans, speech scripts. This reflects the education in China, where business writing and creative writing are not taught or encouraged. In Chinese tradition, a good name brings good fortune. This is why naming is a popular task on the HC platforms, whether it is for a brand, a company or a newborn child. Such names would usually involve traditional meaning of certain characters, folklore, or yin-yang theory.

Discussion of HC Trust in China

The Chinese HC platforms introduced models and features that are not familiar in the American HC sites. Generally we see these as stemming from a low trust, high fraud business environment.

Low Trust driver of the Chinese transaction model

We argue that low trust partially explains the difference in task types between Chinese and American platforms. When the risk of an unsuccessful relationship is high then buyers will only risk small amounts of work and small amounts of money. We anticipate that as the marketplace norms mature (in other words that trust increases) that the amounts will increase and task types will become more substantial.

We discuss two features of platforms vis-à-vis trust.

1. Deposits. Zhubajie's Quick match, described earlier, is a premium service. Both buyers and sellers have to put down a 99 RMB deposit. This would seem odd in the western platforms. But in China, such a feature protects both buyers and sellers. Because of the deposit, sellers will be more serious about bidding on the tasks, while buyers will be less likely to post fake tasks.
2. Proximity Search (Same City Matchmaking). Since HC is new, buyer and sellers are uncomfortable doing business online with someone from another part of the country. Thus, epweike addressed this with its local match function.

Buyer fraud concerns

The competition model protects the buyer but also give the buyer opportunity for fraud, since the buyers could have someone they know "win" the bid. This is referred to as a "fake bid."

In November 2011, Zhongkai Guo, the owner of Tangrenshengye LLC in Jingdezheng, Jiangxi province posted a task on Epweike for a logo design. The task was worth 10,000 RMB and is "zero down payment". The deadline and the price of the task were extended several times, which attracted thousands of sellers and resulted in more than 800 competing works. However, the bid was won by someone who registered on the date of the deadline. Epweike arbitrated the case and

decided to revoke the winning bid and distribute the total payment to the top competing works. This case resulted in the largest lawsuit in the Chinese HC market.

To regulate the market and penalize fraud, the websites have come up with a variety of policies. For example, on May 15, 2012, Zhubajie made an announcement to penalize fake transactions.³ It specified the penalties for sellers/buyers who use fake transactions to boost capability/credit ratings.

Platforms fraud concerns

The HC platforms themselves have also been accused of fraud. Since early 2012, there are increasing complaints at online forums about the fraud at Zhubajie. Some sellers complained that many of the new tasks on the site are replicas of the old tasks that were posted and resolved a few years ago, with the exact descriptions. According to the posts, no one was able to win the bids. It is also said that probably these are the fake tasks created by Zhubajie employees to make the balance sheet look good while the website is facing much challenge from Epweike.

HC Conceptual Model

Our inquiry at this early stage of Chinese HC leads us to present a basic conceptual research model for further refinement (Figure 1). We do not see this model as being mature and ready for testing, but rather as a basis for further refinement. We discuss the elements in this model and our rationale.

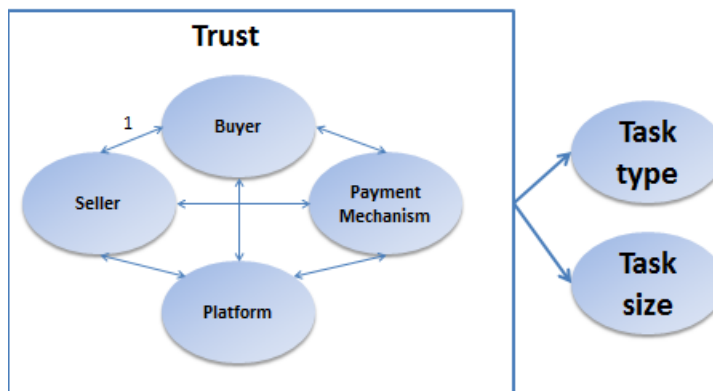


Figure 1: Basic conceptual model of Chinese HC

The key independent construct of trust is captured in the interplay of the four key components inside it: seller, buyer, platform, and payment mechanism. The links between these components, represented in the six reciprocal arrows together establish the overall trust in the human cloud. Based on our data, the most important of these is the reciprocal arrow marked 1—the trust between buyer and seller. In our research we noted trust problems between the triangle of seller/buyer/platform. Here, in this model, we also add one more key component, the payment

³ zhubajie policy is here <http://quan.zhubajie.com/thread/index-threadid-136442-page-1.html>

mechanism. In China this is a more rigid and unforgiving mechanism than in America because of the more common abuses.

Drawing upon the principal-agent perspective, we propose three factors that spawn uncertainty in exchanges on human cloud platforms (Pavlou et al 2007). First, temporal separation between payment and delivery give rise to fears of buyer opportunism, however this is mitigated by platform properties. Second, work performed by sellers can be easily repurposed or resold to other buyers giving rise to seller opportunism; this is also mitigated by platform properties. Third, the temporal separation between buyers and sellers creates information asymmetries to the buyer's advantage, leading to the seller's perception of information asymmetry.

Our research suggests that the low trust environment impacts the dependent variables we note in Figure 1: task types and size.

Going forward it is likely that within this ecosystem trust increase through two main ways: 1) better education and experiences of buyers and sellers; 2) platform improvements—in technology, transparency, and process. Future research will examine the increase in trust and its hypothesized impact on the 1) expansion of task types; 2) increase in size of tasks.

References

- Doan, A., Ramakrishnan, R., & Halevy, A. Y. (2011). Crowdsourcing systems on the world-wide web. *Association for Computing Machinery. Communications of the ACM*, 54(4), 86. Retrieved from <http://search.proquest.com/docview/864108382?accountid=8285>
- Dans, E. 2002. "Existing Business Models for Auctions and Their Adaptation to Electronic Markets," *Journal of Electronic Commerce Research* (3:2), pp. 23-31.
- Shao, B., Shi, L., Xu, B., & Liu, L. (2012). Factors affecting participation of solvers in crowdsourcing: An empirical study from china. *Electronic Markets*, 22(2), 73-82. doi: 10.1007/s12525-012-0093-3
- J. Quinn and B. B. Bederson, "Human Computation: A Survey and Taxonomy of a Growing Field," *CHI 2011*, May 7-12, 2011, Vancouver, BC, Canada;
- Malone, T. W., R. Laubacher and C. Dellarocas, "The Collective Intelligence Genome," *MIT Sloan Management Review* 51-3 (Spring 2010): 21-31
- Pavlou, P. A., H. Liang, and Y. Xue. "Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-agent Perspective." *Mis Quarterly* 31, no. 1 (2007): 105–136.