Day labour mobile and internet systems: Progress guiding document

Table of Contents

Day labour mobile and internet systems: Progress Report document ................................................... 1
Table of Contents .................................................................................................................................... 1
Guiding Question .................................................................................................................................... 1
0. Abstract ............................................................................................................................................... 1
1. Introduction ....................................................................................................................................... 2
2. MSR sustainability and changes in their work model ....................................................................... 5
3. Revised Findings and architectural design ....................................................................................... 6
4. System Design ................................................................................................................................... 8
   4.1 Employers Module ....................................................................................................................... 8
   4.2 MSR officers and workers module ............................................................................................. 9
   4.3 MSR central office module ......................................................................................................... 10
5. How proposed system is expected to meet the aim of the study ................................................ 11
6. Way forward ................................................................................................................................... 12
7. Bibliography ................................................................................................................................... 12

Guiding Question
Day labourers, employers and intermediary organizations: What are the best mobile and internet technology innovations that can optimize their cooperation by making it more efficient and effective?

0. Abstract
This document highlights the progress made in studying how day labourers, employers and intermediary organizations can benefit from pervasive mobile computing and internet
technology. It does so by giving a brief description of what has been done, how it was done
and where possible, what needs to be done in future. It also captures how change of
working model by an intermediary organization being used as a case for this study affected
the design process.

1. Introduction

Day labour is work done where the worker is hired and paid one day at a time, with no
promise that more work will be available in the future [1]. Workers are referred to as day
labourers and solicit work mostly from some specific urban points, although there are those
in rural areas. In the cities of Nairobi, Cape Town and many others in the developing world,
thousands of men and women gather on the roadsides, their daily hope being to find a job.
These men and women are faced with problems one of them being spending most of their
earnings and time looking for jobs.

These urban points where they gather go by different names such as street corners [2].
More often, semi-illiterate or illiterate low skilled workers group themselves in locations
well known to potential employers and the general public who may stop by to pick some of
these people for a job. There are two types of the day laborers groupings identified so far:
one is that which has benefited from natural formation of the collection point and has no
formal intermediary organization governing and soliciting jobs for them, herein referred to
as “self-organizing group”, while the second one is that which is affiliated to a certain
organized (and maybe registered) organization, referred to as “organized group”. An
example of the former is a group of painters observed in Kenya. The latter has been
identified in Cape Town, South Africa, where a well established organization, Men on the
Side of the Road- MSR a organizes and solicits jobs on behalf of day laborers. Other
organizations include 4U recruitment b in the UK, the Labor Works c and hirehelper d in the
USA, and nifulie e in Kenya. Such organizations can be described as doing some kind of
match making between employers and employees (mainly labor workers), and act as an
intermediary (“intermediary organizations”. ) between employers and labor workers.

Intermediary organizations have issues with sustainability. Most of them are Non
Governmental organizations and hence get funded through donations. Others charge a
small fee (mainly from workers and/or employers), while others depend on Government funding.

This document highlights the progress made in studying how day labourers, employers and intermediary organizations can benefit from pervasive mobile computing and internet technology. It does so by giving a brief description of what has been done, how it was done and where possible what needs to be done in future. It also captures how change of working model by an intermediary organization being used as a case for this study affected the design process.

AS Amber H. et al [3] puts, most job-seekers lack web access, government initiatives are minimal, and private-sector efforts are limited and hence there is need for alternative solutions to this unconnectedness problem.

The main aim of the study is to identify and implement innovations that can help day labourers, employers and intermediary organizations work together in a more efficient and effective way than they are today. The study may be categorized as falling under the labour market information system (LMIS) as described by [4].

The study began in September 2009 with preliminary study missions being carried out in Nairobi, Kenya with a self organized group (see the description in the introduction) herein named Men on the Pavement (MP), and consists of mainly men gathering every day in a well known street within Nairobi Central Business District (CBD). In February 2010, the researcher moved to Cape Town South Africa on a similar mission. A study to find out how day labourers operate in South Africa, with a case of an NGO, Men on the Side of the Road [5] was carried out for four consecutive months. Men on the side of the road (MSR) is an non Governmental nonprofit organization that help day labourers, mainly men, in finding jobs. They do so by organizing worker collection points (worker centers, street corners) with the aim of making employers comfortable when going to pick up a worker. (See the document about MSR for a detailed description of how MSR works or visit their website on www.msr.org.za)
By the end of May 2010, preliminary findings and requirements gathering results from Cape Town was leading to diagnosis stage of a cyclic research process. Diagnosis stage according to [6] involves the identification by the researcher of an improvement opportunity at a prospective client organization that is likely to lead to the development of relevant knowledge. Diagnosis was done and a report of titled “what to develop was produced.” It mainly consisted of general conceptual diagram of a system architecture (see Figure 1) of what the researcher thought it would be the best mobile and internet system for day labourers and intermediary organizations.

![Initial general system architecture](image)

Fig 1: Initial general system architecture

To seek further clarifications and to avoid contingency threat i.e. the inability to generalize findings [6] the researcher went back to Nairobi. In June and July 2010, requirements gathering and diagnosis based on the data collected from Nairobi was done. On comparing findings from Nairobi and Cape Town, it was found that the two groups operate in different ways with a few characteristics being shared, and hence a conclusion was reached that
interventions must be specific and unique to each group (see findings from Kenya and Cape Town in the documents)

After an action planning process i.e. data analysis, brainstorming sessions, focused interviews centering on MSR findings, an agreement was reached that an intervention in the form of a mobile based system be provided for MSR. The researcher therefore came back to Cape Town to undertake this task.

2. MSR sustainability and changes in their work model

Between May and July 2010, the MSR management board decided to change their operating model from a free service organization (free to all workers and employers- see the document on how MSR works) to a subsidized fee paying system. The change of their operational model brought with it new ways of doing things and hence the need to introduce extra support system. One such module that needed to be introduced was the payment system, a database system used to capture worker and employer wage payments details.

Another major and drastic change was the need by day labourers to have access to mobile phones in order for them to get membership from MSR. We refer to this as ‘drastic’ because in our findings (see MSR: a summary of finding), less than 30% of all the job seekers interviewed at the collection points had mobile phones. In addition, only about 20% of all the interviewed workers were literate. Because the main aim of this research was to increase opportunities for day labourers, reduce the effort put in by employers in looking for workers and reduce the cost of operation by MSR, the introduction of subsidized fees by MSR made it even more important to pursue the issues further. At this point, there was an extra need to find ways of covering the extra expenditure introduced and especially by the day labourers.
3. Revised Findings and architectural design

New requirements introduced by change in operational model by MSR necessitated and led to another round of diagnosing and action planning, the outcome of which was a mobile-internet system design for employers and MSR field officers (see figure 2). Although the researchers’ initial design consisted of a module for day laborers, it was shot down by MSR design team for reasons ranging from illiteracy to the inability of feature phones owned by workers to supporting any kind of system. This was supported by our initial findings which showed that 90% of all the job seekers don’t own or have any kind of access to mobile phones and cannot read or write.

Initially, a functionality involving an algorithm to allocate jobs within the field officers module was key to our design (see figure 1). However the problem of allocation was sorted out by the fact that all transactions were to be captured at the central database and the
need for registration by workers before any payments. Consequently all allocations would be analyzed by MSR payment team and thus nothing any anomalies in allocation. The assumption is that this would scare out ill-motivated field officers**.

With the introduction of the payment module, users at MSR involved in design proposed that we have a module synchronizing data captured in the field with the payment databases. Although this was initially out scope for this study, the lead designer who is the researcher, found it prudent to include. This would assist in explaining the general flow of the design and more importantly help in keeping user-designer relationship alive. Figure 3 shows how the payment module is included in the design as part of the action taking. It shows our proposed design architecture indicating what is currently in place and the proposed additions. The functionalities are indicated as items and they are either existing or proposed. Item 3, item 4, item 5, item 6 and item 7 are in existence and rely heavily on manual or human (with the exception of item 4) intervention while Item 1, item 2 and item 8 are being introduced into the system and are meant to be automated except for verification of data which is going to be done by way of human intervention. Note that some of the newly introduced items are meant to enhance and not replace the existing ones.

**This is one area the researcher will be interested in during user evaluation and testing process. The outcome of which will be used to decide whether to include allocation algorithm during the next round of design or not
Figure 3: Latest proposed system architecture

4. System Design
Initial design prototypes are being tested with the lead organization, MSR. The ongoing testing is classified as part of the design process. This part explains the three user system modules being designed.

4.1 Employers Module
In a systematic manner, employer module will facilitate adding in of a service order or rating a worker based on a service order by employers. Only those employers who are members can use these services. Non registered members can register and be able to use the system
immediately, thanks to employer registration interface (see figure 4). The module is under user tests and evaluations.

4.2 MSR officers and workers module

According to MSR and the study preliminary findings, field officers perform the same task as would a worker except that the presence of field workers formalizes worker collection points (see about MSR [www.msr.or.za](http://www.msr.or.za) on descriptions of worker collection points). Field officers are also more technology savvy, literate and serve as representatives for MSR. As a result of this and an analysis of results from a quick horizontal prototype design tests, it was necessary to combine the functionalities of a day labourer and field officer modules as one sub-system. Users of this module will have to be pre-created by MSR head office. The reason for the need to create users centrally was motivated by the need to have known and trusted users and hence avoiding abuse of the system by rogue field officers e.g. by creating ghost workers.

Field officers can do the following: Add service order, rate worker, allocate jobs, update worker’s details, update training details, add worker issues and check claims by workers on matters of skills and ratings (see figure 5). This module is also under user evaluations and tests.
4.3 MSR central office module

The main requirement at the MSR national and regional offices was that staff needed get up to date information on the activities taking place in the field. A web based application has therefore been proposed (it is also under test) to automate some activities that are being done manually. The system has the following functionalities: Verify details of registered workers and employers, generate approved list of workers for payment purposes and update payment list (See figure 6).

Figure 6: MSR head office web based application
5. **How proposed system is expected to meet the aim of the study**

The following section outlines the expected benefits of implementing the proposed design. During system evaluation, each aspect of the anticipated benefit will be evaluated for the positives and the negatives, the outcome of which will be a conclusion of what is needed and what is not needed for technologies to support day labour workers, intermediary organizations and employers.

1. Currently, MSR field officers manually capture all worker and employer registrations and job allocations at the worker collection points. Thereafter, they are required to submit the hard copies of the captured data to their regional office, where they are input into the central database, with the proposed mobile based system, all data captured will be transmitted to the central database in real time. Some of the advantages for this include the fact that field officers don’t have to use extra money for fare to travel to the regional office, the office staff will not have to re-enter the data hence reducing data capture errors, workers do not have to travel to regional offices for registrations and finally employers will get registered immediately without having to provide their details to a field officer who may use the data for something else.

2. All job allocations by field officers will be directly reflected in the central database. This will minimize unfair job allocations issues, which were identified as one of the major problems.

3. Registered employers will minimize expenditure associated with looking for a worker. With the application on their mobile phones, they will be able to request for a worker with less than R 0.20 (initial tests shows) and avoid being intimidated by workers at the collection points. Currently, it is estimated that employers use up to R50 when searching for workers as they normally drive to worker collection points.

4. Because all registered day labourers will be having access to mobile phones, their cost of travel to collection points will be minimized, as it will not be mandatory for them to be at the collection point each day.

5. Worker ratings by employers will be easy and cheaper as MSR will not have to call employers reminding them to rate a worker. (calling costs are estimated at about R2 while rating using the new mobile based system will cost less than R 0.2)
6. Because it is easy to distribute the application to employers, it is assumed that many employer registrations will be reported hence improvements on the number of placements by MSR.

7. Who knows what else the application might introduce into the system??

6. Way forward
Our methodology study approach is iterative and cyclic. This is just our first circle. At present, it is difficult to know how many iterations the study will require, but at least two cycles for Cape Town (a case of MSR) and another at least two cycles with Men on the Pavement (MP) in Nairobi. The following is a summary of what will be done in the near future:

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Time period</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User tests and evaluations (Men on the side of the road)</td>
<td>1st Oct to Dec 2010</td>
<td>Cape Town</td>
</tr>
<tr>
<td>2</td>
<td>More literature review</td>
<td>ongoing</td>
<td>Cape Town</td>
</tr>
<tr>
<td>3</td>
<td>Data analysis (from user tests) and reflection</td>
<td>15, Jan to Feb 2010</td>
<td>Cape Town</td>
</tr>
<tr>
<td>4</td>
<td>Further enquiry and action planning</td>
<td>Feb to March 2011</td>
<td>Nairobi</td>
</tr>
<tr>
<td>5</td>
<td>Action taking and user tests</td>
<td>June to August 2011</td>
<td>Nairobi</td>
</tr>
<tr>
<td>6</td>
<td>Second round of action planning, redesign, evaluations and reflections</td>
<td>1st August 2011</td>
<td>Cape Town</td>
</tr>
</tbody>
</table>

7. Bibliography