LITERATURE SURVEY

* The major problem today we are facing is to identify the skilled person to do some small sized works to larger works in our home or office in metropolitan cities to other level cities. In other case, many of the skilled workers are not getting frequent jobs even though they have experience and the required skill sets.
* If we want any worker to carry out for such small works, it is very difficult to get their contact details. Even if we contact them by phone sometimes they may be unreachable or busy with already committed works. In case of workers, finding the work for their needs also very difficult.
* Finding some free workers to do some emergency work also very difficult, even if we ready to pay some extra allowances.
* In order to solve the above problems, to share the worker details to house hold requirements, to share the work details to workers, we are proposing a new approach to design Workers management system which is a mobile and web application to automate the skilled workers requirements in a city such as plumber, carpenter, electrician etc.,
* If anyone has a need of worker they can easily book them via our mobile or web interface if they were busy the application shows an alternative worker to do that work.
* The skilled workers also can register their names and other details through our application in order to get frequent job opportunities and optimal pay depends on their experience and skill set.
* By using this Worker management System, the daily wagers or workers can register their name with their specific working details. For example, an electrician can register himself in application with his details like daily wage, field of work, working timings, experience etc.,
* Similarly people can also login into the application and they can select the worker based on his rating, wage and timings.

**U-Worker Scheduling System: a Case Study at KT** Dong, Cheul Lee ET. EL In a telecom, field workers had many tasks to visit customers and provide services. In the meantime, the amount of task and the diversity of customer needs are overwhelming and the workers available in the telecom’s human resource were not sufficient. To solve this problem, KT had transformed field workers into ubiquitous workers (u-Workers). U-Workers carry a hand held device so that they can communicate with operators at call centers or work managers at local offices anywhere. By using the device, they can get detail information of the tasks and transmit the result of the task after they finished it. Furthermore, KT had adopted work team based appointment reservation system to manage the worker’s schedule. By using this system, call center operators could take customer calls, arrange appointments, and assign the tasks to work teams for providing services. And each worker could retrieve the task which was assigned to their team. However, this system has several disadvantages. First, the operators cannot know precise time when the worker visits the customer site. Second, the workers retrieve tasks which were assigned to their team by themselves so that the tasks cannot be distributed evenly. Third, if an urgent task has assigned to a team which should be done quickly, work managers should find suitable workers on their own even though the system does not provide each worker’s schedule.

We propose an individual worker scheduling system especially to address KT’s u-Worker Scheduling challenge in dynamic environment. KT is the largest telecom in Korea so that we can consider various environment factors.

Previously, KT had used work team based scheduling system which was assigning tasks to work teams. When customers requested a service, an operator in call center searched suitable work teams. Those work teams should have been in charge of the work regions which included the customer site because work regions had been managed by work teams. Also, the total number of allocated tasks of the teams should not exceed maximum location count. To prevent concentrated allocation to a team, maximum allocation count was managed by team hourly. After the operator had selected a suitable team among the teams which satisfying a work region constraint and a maximum allocation count constraint, the task was assigned to the team so that any available u-Workers in the team can dispatch the task and offer the service to the customer. While they were doing their tasks, work managers have been monitoring the progress states of the tasks, and re-scheduled the delayed task.

However, as we mentioned before, this scheduling approach has several disadvantages since the scheduling process is based on the work team. Therefore, we propose individual u-Worker asked scheduling process which assigns tasks to the worker directly as described in Figure 1. In this process, when a customer requests a service, the operator searches suitable u-Workers to deliver the service. Since work regions are managed by u-Worker in this process, the selected workers should have been in charge of the work region which includes the customer site. Work regions are small enough not to make the workers travel for a long time. Also, the workers who have available time slot can receive the tasks and the time slot is managed per 15 minutes.

We proposed the scheduling system for u-Workers especially to address KT’s worker scheduling challenge. To solve this problem, we designed five modules which are the Task Duration Estimator, the Driving Time Estimator, the Schedule Visualize, the Human Resource Manager, and Schedule Manager. They were implemented in NeOSS-WM and the system has been used for scheduling KT’s u-Workers successfully. As a future work, we will improve NeOSS-WM to solve not only KT’s workforce scheduling problems but also other resource scheduling problems.

“**A Software Process Management System Considering Workers’ workload, Atsuo**” HAZEYAMA ET. EL Workers in software projects are usually engaged in plural works, not only the main development works but also various other works, concurrently. Such other works might put Pressure on the schedule of the whole project Therefore in order to manage the whole project appropriately, not only the main development works but also various other works should be dealt with as management objects. This paper clarifies a frame- work to support various type of works and different granularity of processes in an integrated manner and shows the behavior of the system.

Workers in software projects are usually engaged in plural works, not only the main development works but also various other works, concurrently. Such other works might put pressure on the schedule of the whole project.

This paper clarifies a framework to support various type of works and different granularity of processes in an integrated management of the whole project by taking into consideration workers’ workload.

The advantage of the system is to identify the workers who are doing activities at how much workload at that time and the disadvantage of the system is worker will not know the report how much time he has worked.

“**Property of Worker Allocation Optimization with Two Professional Workers in Limited-Cycle Multiple Periods**”, Xianda Kong ET.EL In this paper, we deal with an assembly line with limited-cycle multiple periods with two kinds of workers. Skills of workers are assumed to be different. We consider an optimization problem for finding an allocation of workers to the line that minimizes total expected cost satisfying the demand. Then we propose a theorem of the property of the optimal worker allocation and discuss the other properties in conditions.

In this paper, we analyze the theoretical regularities in order to check out the certain optimal worker allocation with two professional workers. The remainder of the paper is structured as follows: Section II formally describes a simple model (here we call it ‘reset model’) and defines the optimal worker allocation problem under the reset model. The succeeding section describes the property of optimal worker allocation with two professional workers as theorem. Then numerical experiments will be done trying to find out the properties of optimal worker allocation with two professional workers.

The advantages of this paper is to resolve Optimal worker allocation with two professionals and the disadvantage of this paper is System suggests one among two workers , no chance for the user to select.

“**Structural Analysis of Approaches for Worker Participation**”, U. Dombrowski ET. EL The participation of workers is one of the main topics of manufacturing enterprises. The goal is to increase the satisfaction, motivation and thus the productivity of workers, to use the creativity and the knowledge of the whole workforce to improve processes and to reward workers for their commitment. The approaches for worker participation vary widely. Examples would be surveys about labor conditions, participation in planning processes for the layout of their workplaces or employee profit sharing. In the course of a rising spread of lean production systems the degree of participation increases. The common consent for participation declines as more responsibility is assigned to the worker. In this paper the different forms of anticipation will be described and clustered. Furthermore, criteria for the selection of adequate methods of participation will be derived.

Participation means to allow workers to take active part in planning and decision processes. The person concerned should participate in the change process. A wide range of approaches to participation exists. Participation is generally considered as a win-win situation. The enterprise and the worker should benefit from these approaches.

The advantage of this paper is to Increasing the satisfaction and productivity of workers and the disadvantage is that Based on performance of workers work can be assigned.

**Worker Assignment Optimization under Reset Limited-Cycled Model with Multiple Periods** - Focus on Worker’s Clever Tasks - Xianda Kong, Hisashi Yamamoto ET.EL In uncertain cases, the result and efficiency of current period (or production cycle) are influenced not only by the risks which exist in current period but also by the risks which exist in the previous ones. What is more, the risk itself is also affected greatly by the risks which exist in the earlier periods. This kind of problem is called a limited-cycle problem with multiple periods. Normally, workers’ efficiency is different on different tasks. How can we get an optimal assignment to minimize the total expected costs? In this paper, we consider the optimal worker assignment considering two kinds of efficiency, clever or poor efficiency on tasks. The regularity will be described that n-2 workers have two clever tasks of all, 2 worker has no clever task by contrast. Also, some numerical experiments will be done to check out the regularity of the optimal assignment that each worker has three clever tasks.

In this paper, a new problem called optimal worker assignment problem is formulated as a development of classical assignment problem applying reset model with multiple periods. And some regularity of optimal worker assignment is proposed. As further work, the regularity of optimal worker assignment with the variety of the workers’ efficiency vs. task can be considered.

The advantage of this paper is optimal assignment problem with multiple periods and the disadvantage all the workers not having work only efficient workers can have the work.

**Optimal Selection of Crowdsourcing Workers Balancing their Utilities and Platform Profit** - Sujan Sarker, Md. Abdur Razzaque - In a Mobile Crowdsourcing System (MCS), a platform outsources sensing tasks to numerous mobile worker devices. The collected data are analyzed and the processed information is shared among many other interested users. The platform pays the workers for the sensing data and earns money from the users receiving processed information services. Distributing the sensing workloads among the potential workers so as to maintain the required data quality and to make a reasonable amount of profit is a challenging problem for such a platform. In this work, we develop a workload allocation policy that makes a reasonable trade-off between worker utilities and platform profit.

It quantifies the utility (i.e., the quality of sensed data) of a worker as a function of worker mobility, current location and past sensing records. The workload allocation problem is formulated as a multi-objective non-linear programming (MONLP) problem which aims to make the desired trade-off between worker utilities and platform profit.The allocation problem is shown to be NP-hard and thus we develop two greedy algorithms with relaxed constraints to achieve polynomial time solutions. Performance of the proposed workload allocation policy is evaluated in a distributed computation environment using MATLAB. The results show its effectiveness compared to state-of-the-art methods in terms of platform profit, quality of sensing data and request service satisfaction.

The advantage of this paper is to balancing the profit earned between the workers i.e.,Reasonable workers and the disadvantage is to assign work to less skilled persons.

**Multicategory Crowdsourcing Accounting for Variable Task Difficulty, Worker Skill, and Worker Intention** - Aditya Kurve, David J. Miller: —Crowdsourcing allows instant recruitment of workers on the web to annotate image, webpage, or document databases. However, worker unreliability prevents taking a worker’s responses at “face value”. Thus, responses from multiple workers are typically aggregated to more reliably infer ground-truth answers. We study two approaches for crowd aggregation on multicategory answer spaces: stochastic modeling-based and deterministic objective function-based. Our stochastic model for answer generation plausibly captures the interplay between worker skills, intentions, and task difficulties and captures a broad range of worker types. Our deterministic objective-based approach aims to maximize the average aggregate confidence of weighted plurality crowd decision making. In both approaches, we explicitly model the skill and intention of individual workers, which is exploited for improved crowd aggregation. Our methods are applicable in both unsupervised and semi-supervised settings, and also when the batch of tasks is heterogeneous, i.e., from multiple domains, with task-dependent answer spaces. As observed experimentally, the proposed methods can defeat “tyranny of the masses”, i.e., they are especially advantageous when there is an (a priori unknown) minority of skilled workers amongst a large crowd of unskilled (and malicious) workers.

The advantages of this paper is to post problems to online workers and the disadvantage is to no selection of worker from the pool of online workers.

**Constructing a Global Social Service Network for Better Quality of Web Service Discovery** **-** Wuhui Chen, Incheon Paik : Web services have had a tremendous impact on the Web for supporting a distributed service-based economy on a global scale. However, despite the outstanding progress, their uptake on a Web scale has been significantly less than initially anticipated. The isolation of services and the lack of social relationships among related services have been identified as reasons for the poor uptake. In this paper, we propose connecting the isolated service islands into a global social service network to enhance the services’ sociability on a global scale. First, we propose linked social service-specific principles based on linked data principles for publishing services on the open Web as linked social services; then, we suggest a new framework for constructing the global social service network following linked social service-specific principles based on complex network theories. Next, an approach is proposed to enable the exploitation of the global social service network, providing Linked Social Services as a Service. Finally, experimental results show that our approach can solve the quality of service discovery problem, improving both the service discovering time and the success rate by exploring service-to-service based on the global social service network.

The advantage of this paper is to improves the quality of services discovery from isolated services to linked social services, slove the quality of service discovery problem and the disadvantage is the system does not involve users feedback such as positive and negative feedback.