

# Formulating Cohesive Digital Ecosystem of Micro Sourcing Business Process in Malaysia

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**Abstract**—Malaysia is fostering a digital ecosystem through several initiatives with intention to create itself as developed digital economy country as well as uplifting household income of each family by 2020. Micro sourcing is one of the industries that can strongly support the country into this direction which it able to facilitate income generation among the poor. The poor which resides at the bottom 40 percentage of the population in terms of household income per capita can generate extra income by becoming as a micro worker. In this study, we formulated a cohesive digital ecosystem of existing micro sourcing business process that combined with existing ICT and government's digital initiatives. We identified some vital technologies that appropriate to the B40 level of knowledge and affordability. The ecosystem is expected to facilitate the responsible agencies to identify initial action plans to strengthen the micro sourcing implementation throughout the country.

**Keywords**—Micro Sourcing; ecosystem; uplift income; ICT enablers

## I. INTRODUCTION

In the past decade, the scope for ICTs in economic development and poverty reduction has expanded. The role of ICTs among poor people and communities has increased tremendously. One of the ICT industries – the micro sourcing industry – has been identified as a potential industry to help increase income for the poor in Malaysia, especially the B40 group. The B40 are the group of those whose per capita household income level is at the bottom 40% of the population.

In Malaysia, the Government has introduced many ICT-related initiatives and programs to leverage ICT usage as enablers to develop rural and remote communities and also to reduce number of poverty households in the country. Under Digital Malaysia program, micro sourcing industry has been identified as a potential industry to uplift the income of the population in the bottom 40% household income (B40).

However, the structure of the micro sourcing business process in Malaysia which is still at its infancy stage has yet been studied constructively. Therefore, we conducted a study on the existing local micro sourcing business process and its implementation with intention to formulate a cohesive ecosystem that effectively combined with existing ICT to facilitate the government to strengthen the industry.

The findings and outcome of the study is reported in this paper. Basically, the organization of this paper is as the followings. Section 1 starts with introduction on the Malaysian government efforts in uplifting income among the poor by leveraging ICT usage. Section 2 presents the definition of micro sourcing in general. Section 3 discusses the properties of the B40 group. Section 4 covers on global review on existing scenario of micro sourcing industry. Section 5 describes on the methodology used in acquiring data and information in relation to micro sourcing from the stake holders. Result and discussion are presented in Section 6 and finally Section 7 draws the conclusion.

## II. MICRO SOURCING

Micro sourcing is defined as “...the art of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call”[1]. In another word it is “to outsource a job to a large, anonymous crowd of workers, the so-called human cloud, in the form of an open call” [2].

Therefore, this study defines micro sourcing (also referred as crowd sourcing) as the distribution of well-defined tiny tasks (also referred as micro tasks) to a large group of networked users (micro workers) through the internet. These tasks can be completed under flexible circumstances – own time and locations – using basic internet connected devices such as mobile phones, smart phones, tablets, notebooks and personal computers (PCs). Micro sourcing has become a cost effective way for companies to give opportunities for individuals outside of the companies to use their skills and time for good use and earn additional income. These companies pay people based on the amount of hours of works, and save millions of Malaysian Ringgits (MYR) by doing so. Micro sourcing also allows companies to employ a large group of skilled people to handle projects within a specific time frame for a fixed price. Micro sourcing is an effective way to accomplish tedious tasks at a faster rate. Task can be done either online or offline. Normally, micro sourcing involves large projects that are broken down into micro tasks. These micro tasks are well-defined and then distributed to a group of workers. Typical micro tasks are translation, data validation, image tagging, research, writing, editing, categorization and data entry.

TABLE I. BENEFIT OF MICRO SOURCING

| Beneficiaries          | Benefits  |
|------------------------|---|
| Micro sourcing Workers | <ol style="list-style-type: none"> <li>1. Flexibility of doing work during hours, locations and duration of their own choices.</li> <li>2. Additional income to complement existing income</li> </ol>   |
| Organizations          | <ol style="list-style-type: none"> <li>1. Access to talents/skills which would otherwise would not be economically feasible to maintain in-house or acquire out of house.</li> <li>2. Faster execution as the tasks can be completed without having to hire or/ and train new employees.</li> </ol>   |
| Economy                | <ol style="list-style-type: none"> <li>1. Greater utilisation of talents as people who choose to leave full-time workforce can still contribute to the economy.</li> <li>2. Improve the productivity of local talents.</li> <li>3. Potential to reduce K-workers gap in certain sectors by employing K-workers using micro sourcing.</li> </ol> |

### III. THE BOTTOM 40 (B40)

Poverty in Malaysia is conceptualized and defined as income poverty and measured using a poverty line income to demarcate poor and non-poor households. The poverty line is determined in both absolute and relative terms. Absolute poverty line is calculated based on the income required to purchase a minimum food basket and other basic necessities. The relative concept of poverty stresses income inequality as its fundamental manifestation and is reflected in the definitions of poverty in the lower quintiles of the population, the welfare ratio and the index of poverty. Criteria of B40 as listed in the 10<sup>th</sup> Malaysian Plan report are shown below:

TABLE II. B40 CRITERIA

| Criteria        | Description  |
|-----------------|--|
| Income          | <ul style="list-style-type: none"> <li>• Earned less than MYR2, 300 per month with average salary of MYR1, 400.</li> </ul>   |
| Size            | <ul style="list-style-type: none"> <li>• 2.4 million Households (in 2009) with average size of 3.8 per household.</li> <li>• 9 million people classified as poor and 1.8 per cent as hard poor.</li> </ul> |
| Geography       | <ul style="list-style-type: none"> <li>• 51.4% of households live in urban area.</li> </ul>  |
| Education Level | <ul style="list-style-type: none"> <li>• 52.3% has no school qualification.</li> <li>• 25.4% has Upper level - Secondary School</li> <li>• 17.9% up to lower level-secondary school</li> </ul>             |

Source: RMK-10 Report, Malaysia Economic Planning Unit (EPU)

The role of developing countries and poor people and communities as consumers and producers of ICTs is evolving. There is growing interest in developing countries as potential growth markets for ICT goods and services. In response, ICT producers are adjusting their products as well as business models to target low-income consumers. More resources are allocated to find ways to reach the “bottom of the pyramid” [3]. Improving mobile access – partly as a result of cheaper imports of technology – at increasingly affordable rates, and new service models are facilitating access for people without large or predictable incomes. This development has allowed for greater involvement of enterprises from developing

countries in ICT-related innovation processes [4]. ICTs can also strengthen internal information systems for those (predominantly growth-oriented) enterprises.

The Malaysian Government realizes its responsibility to upgrade the quality of life of these people has seriously list down its commitment for the RMK-10 development program which period in between year 2011-2015. Therefore to materialize these National Agenda, ICT together with micro sourcing can be used as a mechanism to uplift the low household income group.

### IV. REVIEW OF GLOBAL MICRO SOURCING INDUSTRY

#### A. Micro Sourcing Across the globe

Global micro sourcing industry recorded substantial growth in the past few years. The industry’s completed task grew exponentially from 400,000 in 2008 to 291.8 million in 2011[5]. The industry’s total revenue meanwhile grew approximately 52.6% in 2010 and accelerated further to grow by 7% in 2011[5].

Demand in the global micro sourcing industry is driven by start-up and small companies. Collectively they account for over 60% of the market revenues. Start-up companies drive majority of the revenues in the industry, contributing 39% of the total revenues. Large enterprises with revenue of more than US\$1 billion represented only 8% of total job providers but contributed 21% of total revenues due to huge transaction volume.

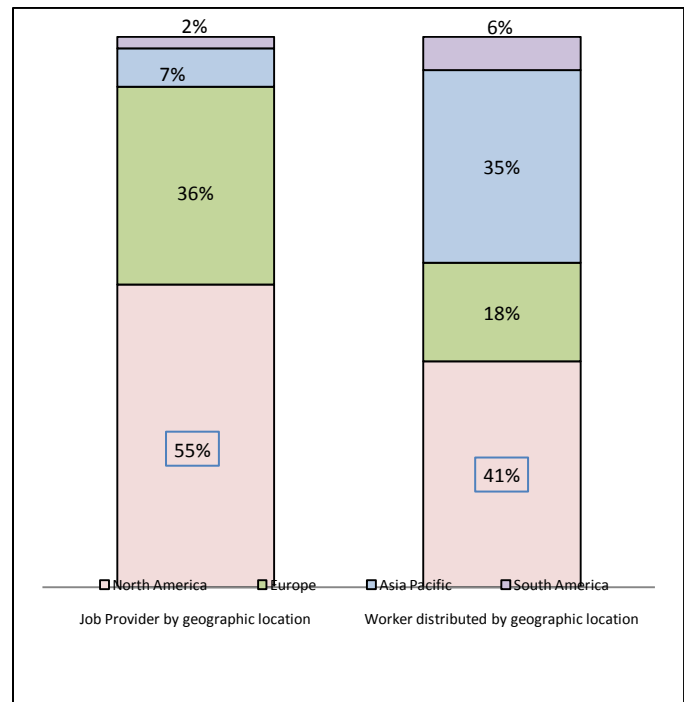


Fig.1. Distribution of Job Provider sand Workers by Location

The largest job providers which offering 90% of the jobs are companies from North America and Europe. On the other hand, supply of workers are more diverse with North America provides the biggest number of workers, 45% of total workers, and followed by Asia.

Comparing the distribution of the job provider and the workers, Europe is the largest net job provider by providing 36% of the global micro sourcing jobs. Meanwhile Asia is the largest net supplier provides 35% of the global workforce but only 7% of global micro sourcing jobs.

In terms the micro sourcing landscape, the globally matured landscape comprises of eight components as explained as the followings:

- a) *Marketplaces* - Matching buyers and sellers of services and financing through mechanisms including bidding and competitions. (Examples: Service Marketplaces, Competition Markets, Crowdfunding Equity Crowdfunding, Microtasks, Innovation Prizes, Innovation Markets);
- b) *Platforms* -Software and processes to run crowd works and crowd projects for use with internal or external crowd. (Crowd Platforms, Idea Management, Prediction Markets);
- c) *Crowd Processes* -Services that provide value-added processes or aggregation to existing crowds or market places;
- d) *Content and product market* - Sale of content or products that are created, developed, or selected by crowds. (Content Markets, Crowd Design);
- e) *Non-profit* - Tapping crowds to create non-financial value. (Citizen Engagement, Contribution, Science);
- f) *Crowd services* - Services that are delivered fully or partially by crowds. (Labor Pools Managed Crowds);
- g) *Crowd Venture* - Ventures that are predominantly driven by crowds, including idea selection,development, and commercialization; and
- h) *Media and Data* - Creation of media, content, and data by crowds. (Knowledge Sharing, Data Content).

#### *B. Impact Sourcing: A Social Micro sourcing Model*

Impact Sourcing, an emergent concept in the outsourcing industry, is based on the premise of creating long-term social impact by utilising global sourcing of services. The concept focuses on employment generation for poor and vulnerable people by providing access to job opportunities in the BPO sector. Impact Sourcing includes BPO tasks such as data management, content editing and low-end transcription. By connecting latent demand for such tasks from large global companies with an untapped pool of sufficiently skilled labor, Impact Sourcing has the potential to change the socioeconomic landscape in developing regions of the world.

Private and public sector entities, including multinational corporations and large Governmental entities, are aggressively driving customer demand to outsource operational tasks to enhance efficiency. Impact Sourcing attempts to capitalise on the expanding pool of providers or sellers of outsourcing services to employ poor and vulnerable people who otherwise would have limited opportunity for employment.

A study by Avant estimates the market size for Impact Sourcing service to be over US\$10.7 billion in 2012 with

nearly 561,000 people employed, which is approximately 10% of the total current BPO global employed workforce.

Impact Sourcing Service Providers (ISSPs) have a very optimistic expectation of healthy growth with 40% of the ISSPs expect to grow at more than 50%. Even with a conservative compounded annual growth rate (CAGR) of 20%, the Impact Sourcing industry can expect to employ around 2.9 million people by 2020 (roughly 23% of the employment in global BPO sector). This would be subject to implementation of appropriate policy initiatives by the governments to stimulate the Impact Sourcing industry. In terms of revenues, the Impact Sourcing industry can grow to over US\$55.4 billion by 2020 (roughly 7% of the global BPO services revenue) from around US\$10.7 billion today.

#### *C. Impact Sourcing Ecosystem*

In an Impact Sourcing ecosystem, all service model inputs and business model players will contribute to an ecosystem where all players within the ecosystem benefit from Impact Sourcing in a 'win-win' scenario. The Impact Sourcing ecosystem leverage each organisation's strength to create a positive impact on each other. The linkage in the ecosystem is explained below:

- a) *Buyer of Service (The Client)* - The Client meets its traditional objectives of cost savings and revenue growth by outsourcing. In addition, the Client has an opportunity to implement its Corporate Social Responsibility (CSR) objectives by positively impacting the communities in which its outsourcing provider operates.
- b) *Impact Sourcing Service Provider (ISSP)* - ISSP's main role is to meet the cost and quality expectations of their clients. Part of the main role is to provide training to employees. As the 'link' between clients and employees, ISSP has the ability to measure and analyse impact of specific clients' tasks to employees and the community as a whole.
- c) *Talent Supply (Employees)* - The ecosystem provide Employees access to training and job opportunities that would be unavailable to them in a traditional job market. They are able to provide additional income to themselves and their families. Higher income will lead to greater access to healthcare and education as well.
- d) *Greater Community* - The economic status of the community is positively impacted through the greater purchasing power of its residents, which indirectly increase demand for clients' products.

#### *D. Impact Sourcing Business Model*

In a typical Impact Sourcing model, outsourced business process services are first broken down and grouped into smaller subsets of tasks that can be performed by individuals with at least some high school education.

Next, locally based entities that can hire and train individuals from the poorest sections of society to perform such tasks offer their services in the marketplace to perform the work. Based on case studies carried out on existing ISSPs, two main ISSP business models were identified.

a) *Model A*

The ISSP owns the outsourcing contract and interacts with the client. The ISSP delivers the service to the client, owns the outsourcing center and manages local employees to perform the day-to-day outsourced tasks.



Fig.2. Micro sourcing Business Model A

b) *Model B*

The ISSP owns the outsourcing contract and interacts with the client. However, the ISSP uses a sub-contractor to deliver the service and perform the day-to-day outsourced tasks. More than one sub-contractor can be used in this model. The ISSP retains overall accountability for the contract and service provision.

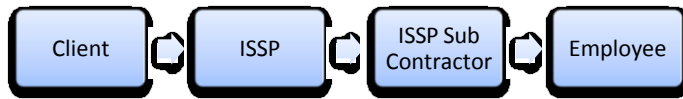


Fig.3. Micro sourcing Business Model B

In addition to the business models above, the Stanford Law School has provided guiding principles for socially responsible outsourcing as follows:

- Get money into high poverty areas;
- Keep money in high poverty areas; and
- Keep money in good companies.

The School also provides guiding principle for Clients who want to help low-income and socially disadvantaged people pull themselves out of poverty. Clients are encouraged to follow any two of the three principles listed below in choosing an ISSP:

- Hire firms in poor or very poor region;
- Hire micro, small and mid-sized firms; and
- Hire firms that are owned by or employ a majority of disadvantaged people.

Based on above literature, we proceed the study to the next stage which is the major work on the data and information gathering stage that derive into the findings.

The methods used during the data gathering is explained in the subsequent section.

## V. METHODOLOGY

Our first source of reference is documentation relating to micro sourcing and Digital Malaysia to understand the micro sourcing industry and the overall concept of Digital Malaysia

program. To further understand requirements of micro sourcing industry players, focus group meetings and discussion were held starting with a focus group meeting and discussion with Micro Sourcing for B40 Consultative Committee (MSCC). MSCC is responsible to lead, oversee, formulate plans for local micro sourcing growth and identify micro sourcing opportunities for B40. Members of MSCC come from various non-governmental organizations (NGOs), government agencies, private organizations, universities and distinguished individuals.

Information gathering also involved general observations, meetings and discussions held with relevant stakeholders. Two workshops were held to gather information from stakeholders and to discuss our initial findings for the study. The first workshop has been conducted with the objectives to gather information on micro sourcing potentials, opportunities, potential growth and critical enablers from the perspectives of stakeholders. The second workshop discussed the study findings and recommendations on the micro sourcing ecosystem and its directions. Participants of both workshops were from MSCC, government ministries and agencies, NGOs and private sectors.

To enrich the data and information gathered, follow up interviews were done with some related government agencies and private sectors. The interviews help to uncover current practices, requirements and challenges in existing Malaysian micro sourcing environment. Interviews with related organizations also help identify potential partnerships for micro sourcing strategic implementation. The information gathered from all these sources was then compiled and analyzed as inputs for this study.

## VI. RESULT AND DISCUSSION

### A. Micro Sourcing Business Model

The diagram above shows the existing micro sourcing business model in Malaysia. There are three groups involved in the business model namely Job Providers, Platforms and Micro Workers.

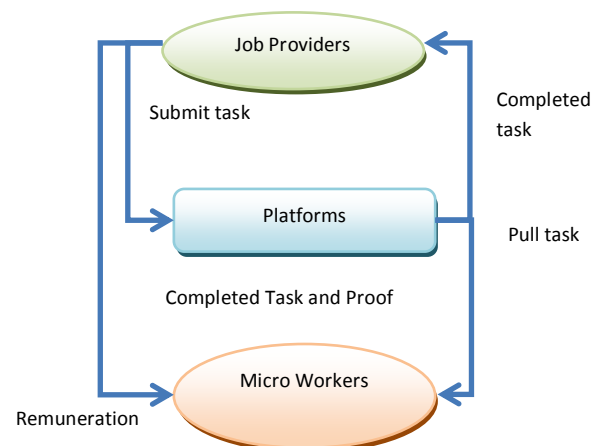


Fig.4. Existing micro sourcing business model in Malaysia

Descriptions of their roles are described below:

#### a) *Job Providers*

Many organisations, mostly from the private sector, act as job providers by outsourcing their jobs to multi sourcing platforms. Some of these organisations are Giant, Watson and McDonalds. These jobs consist of both IT-related and IT-enabled tasks. Among the tasks are Facebook page development, data entry and online marketer traffic counter. These tasks are given to micro sourcing platforms to be advertised to micro workers. Once tasks are completed, job providers will pay the micro workers directly without going through platforms. The traditional outsourcing industry in Malaysia is growing with number of jobs advertised and job providers increasing. Number of job providers grew three-fold from 520 in 2009 to 2,400 in June 2012. Number of jobs advertised also grew three-fold from 619 to 3,000 in the same period. Based on value of jobs advertised in the period of January to June in 2012, 77% of them are sourced from SMEs, followed by multinational firms (18 percent). The Government provided only 1% of total market.

#### *b) Platforms*

Once a platform receives a task from a job provider, it will advertise the task on its website for micro workers to pull. Among the details advertised are the name and detail of the task, and the compensation. Once a task is completed, it will receive the completed task together with proof from micro workers. The platform will check and verify the completed task before submitting it to the job provider. Most local micro sourcing platforms play very limited roles. They advertise the tasks source from job providers and once tasks completed by micro workers; they verify those tasks before submitting them to job providers. Their roles in the local micro sourcing industry are not as wide as international platforms. However, there are local platform owners that provide training for micro workers including those from the B40 group.

#### *B. Micro Sourcing Workers*

Once a task is advertised on a platform, micro workers will pull the task based on their interests. Once the task is completed, they will submit it together with proof of the completed task to the platform. Once the task is verified as completed by the platform, they will get paid directly by the job provider. The same as job providers, there is no comprehensive data on the number of micro workers in Malaysia. Thus, data from the same study by YourPartTime.com is used as proxy. The study showed that the number of micro workers in Malaysia is growing exponentially, in line with global trend. With initial number of 2,000 in 2009, the number increased to 22,000 in 2010, 46,280 in 2011 and 65,000 as at June 2012. This data is supported by increasing number of job placement for micro sourcing tasks by Job Malaysia that showed similar trend.

#### *C. Enablers*

The adoption of wired and wireless devices is an important catalyst in the micro sourcing industry. There are many ICT infrastructures that can be utilised in the local micro sourcing ecosystem. Among them are personal devices, public Telecentres and cloud computing technology. As micro sourcing offers flexible work practices, technological advances such as mobile phones, laptops and computer with internet access and converged mobile devices (CMDs) are

critically needed to facilitate this non-traditional working arrangement.

#### *D. Personal devices*

With requirements to contact, communicate, receive and deliver micro sourcing related tasks, personal devices are essential basic infrastructures to be available among micro workers. Basic device such as mobile phone can already be utilised to do basic micro tasks. More advance devices such as CMDs, also known as smart phones, provide a more advanced computing capability and connectivity to a wide variety of data, functions and applications.

The need for micro workers to receive or submit micro sourcing information and task, anytime, anywhere has critically put internet connected personal mobile devices as an essential enablers in micro sourcing. Protocol based on Hypertext Transfer Protocol (HTTP) and Extensible Markup Language (XML), enables personal devices to access information such as e-mail, calendars and contacts on a remote server, in addition to providing management tools through exchange ActiveSync mailbox policies and other tools.

The availability of multi-functional computing can effectively allow micro workers to conduct a range of work and tasks without being confined to an office setting. These devices also enable micro workers to quickly and easily connect to micro sourcing platforms and information sources from almost any location. Because of their multiple functions and connectivity abilities, the advancement of wireless personal devices specifically CMD will have great impact on the spread of micro sourcing tasks to huge and heterogeneous mass of potential micro workers including the targeted groups.

#### *E. Telecenters*

In order to bridge the socio-economic disparities of previously under-served sections of society, a total of 2,477 public telecentres have been created in Malaysia under various Government initiatives. Most of these telecentres are equipped with computers and laptops with internet connections and webcams, printers, fax machines and projectors.

Creation on public telecentres aim to provide the marginalised community with access to ICTs services ranging from basic services such as Internet connectivity, e-mail, scanning and printing to more specialised services such as telemedicine and e-learning. Telecentre initiatives are motivated by attempts to improve people's lives by using ICTs, with an underlying belief to develop underdeveloped areas through access to and use of IT. In Malaysia, these telecentres are administered by the Government or its appointed agencies and organisations.

Public telecentres can be utilised by micro workers to access micro sourcing platforms and complete their micro tasks. A study shows that about 50.1% of IT usages in these telecentres are for accessing information for individual needs and only about 15.6% are for business purposes. It can be concluded that existing telecentres are not fully utilised by the targeted groups to generate income. The limit on operation hours could be a reason for it and can be a major constraint to use telecentres as micro sourcing distribution centres.



#### F. Cloud Computing

Establishment of a micro sourcing platform requires five major components – hardware, software, network and communication facilities, databases and data workers, and information management personnel. Managing, deploying, provisioning and updating these components are time consuming and expensive, which is a burden to platform providers. Putting software on a server with no management or usage tracking capabilities around them can cost even more. The latest trend, cloud computing with reduced complexity, lower cost, and improve scalability, can assist platform providers manage their platforms.

Micro sourcing stakeholders especially platform providers can optimize their ICT infrastructure through cloud computing. Cloud computing uses a concept of shared resources such as remote hard drives for storage and software applications that are accessible by computers and other devices on demand through internet connection. These resources are available to users/clients on demand and paid based on usage. Using cloud computing, platform providers will have the opportunity to leverage enterprise-level applications and development without the associated upfront capital expenditure pinch or complex IT roll-out. Cloud computing may also be more flexible in developing new micro sourcing applications because the cloud includes middleware, and users are not limited to one server or one data centre. Cloud computing also has been proven to be very scalable, and can overcome technical fault or maintenance related downtime.

The usage of personal mobile devices by micro workers makes cloud services as the ideal infrastructure to host micro sourcing applications and tasks. Cloud computing allows delivery of information and functionality to users and systems via mobile devices. Thus, micro sourcing can be done through mobile communities because the cloud allows them to exist in the same cloud hosting rather than being isolated in enterprise or single single-PC environments. Through cloud services infrastructure, the data can be gathered from cloud-based communities, through cloud services, from mobile endpoints and globally available environment, which demonstrate an excellent concept of micro sourcing. The concept of micro sourcing where information and applications are stored in unidentified servers and temporarily accessed from Internetable terminals makes cloud computing an ideal infrastructure for micro sourcing players to increase scalability, speed-up implementation, and reduce costs.

According to Frost & Sullivan (2011), many enterprises in Malaysia are heading for cloud services with about 33% of businesses have adopted cloud computing. Cloud computing market in Malaysia is currently estimated at US\$29 million, with Software-as-a-Service (SaaS) contributed about 91 percent of the market, Infrastructure-as-a-Service (IaaS) contributed about 8% and Platform-as-a-Service (PaaS) contributed about 1%. Malaysia's IaaS market is expected to grow significantly by 59% in the 2010- 2014 period.

#### G. Proposed Micro Sourcing Ecosystem

To ensure the effectiveness of this project, a complete Micro sourcing Ecosystem need to be develops.

A complete ecosystem will allow role players to link with one another effectively to ensure that the objective to uplift economic status of the B40 group can be achieved. A Micro sourcing Ecosystem is hence proposed as shown below.

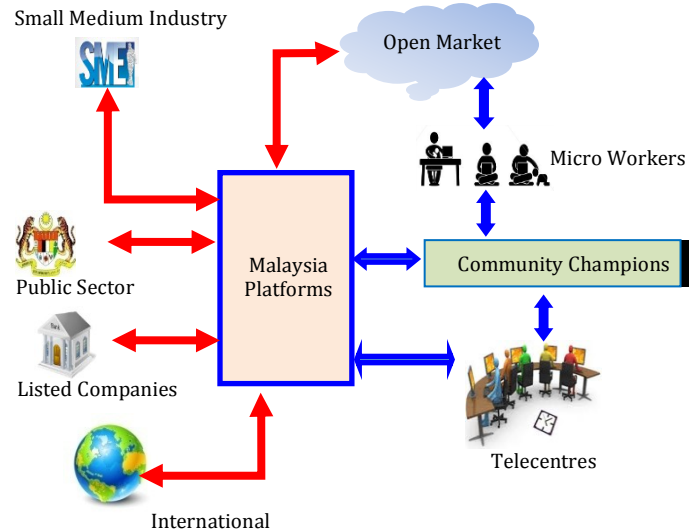


Fig. 5. Proposed Micro Sourcing Ecosystem

The proposed Micro sourcing Ecosystem is an expansion to existing local micro sourcing industry. Additional elements are linkage and structure between relevant stakeholders to create the Ecosystem. The Ecosystem comprises of four groups of role players. The first group is Job Providers who provide the tasks. The second group is Micro Workers who are the people who complete the micro tasks. The third group is the Malaysian Micro sourcing Platforms. The fourth group is the Enablers that enhance the capability and capacity of the first three groups.

Job Providers consist of local players – public sector, listed companies and SMEs – as well as international firms. Local SMEs have the potential to be the main job providers in the micro sourcing industry. Demand in the international micro sourcing industry is driven by small and start-up companies. Collectively they account for over 60% of the global market revenues. Public sector also has good potential as job provider in the industry in the areas of digitization in Government process. Amendment in Government procurement policies will also encourage micro sourcing players. As for international job providers, North America and Europe have the most potential as these two regions offer 90% of tasks in the global micro sourcing industry.

The Platforms is the key in developing the Micro sourcing Industry in Malaysia. The Platforms are software and processes to run crowd works and crowd projects for use with local and international micro workers. The capability of the Platforms is important to provide opportunity for local companies and public sector to enter the micro sourcing industry, and also to provide more opportunity for local micro workers to participate in micro tasks provided by international firms. Micro workers can access the Platforms directly using their own infrastructure via Open Market mechanisms including bidding and competition process.

The Enablers meanwhile is the key component in the Ecosystem to enhance the capability and capacity of the other groups with focus on the B40 group, the targeted micro workers. Community Champions' role is to identify and train micro workers from the targeted groups. They can also become an ISSP or ISSP sub-contractor, including operating Telecentres, which are the main ICT infrastructure for the B40 group to participate in micro sourcing. Community Champions could be non-Governmental organizations (NGOs), foundations or even individuals. Telecentres meanwhile, shall be located in areas that can be easily access by the B40 group.

#### H. Micro sourcing to generate income for B40

Micro sourcing has been identified as one of the ways to increase B40 group's income. Involvement of B40 group in micro sourcing activities will allow them digital access and be paid for completing micro tasks. Another positive impact from micro sourcing initiative is the value-added benefits to the B40 group. Other than earning additional income to complement their existing income, they will also acquire new skills from the training provided.

Malaysia is in its effort to position itself as a worldwide centre for micro sourcing industry. The followings are recommended action plan to be carried out to facilitate micro sourcing industry development in Malaysia.

TABLE III. ACTION PLAN TO FACILITATE MICRO SOURCING INDUSTRY

| NO | ACTIONS  |
|----|--|
| 1  | Establish public-private partnerships (PPPs) to spearhead micro sourcing industry in Malaysia.   |
| 2  | Catalyse local micro sourcing platform champions.<br>Starting with one company/ platform as champion initially, 15 champions are targeted by 2020.   |
| 3  | Nurture, recruit and train potential employees with focus on the B40 group.  |
| 4  | Create and capture demand, both domestically and internationally.<br>Market Malaysian micro sourcing firms internationally.<br>Allocate some existing or planned Government spending to micro sourcing |

#### VII. CONCLUSION

Micro sourcing has been identified as one of the ways to increase B40 group's income. It focuses on generating income and offering digital access to all levels of society, especially the B40 group. Involvement of B40 group in micro sourcing activities will allow them to digital access and be paid for completing micro tasks.

In this study, we formulated an ecosystem of current micro sourcing business process in Malaysia. The proposed ecosystem is an expansion to existing local micro sourcing industry. The ecosystem comprises of four groups of role player. The first group is job providers who provide tasks. The second group is micro workers who are the people who complete the micro tasks.

The third group is the micro sourcing platform. The fourth group is the enablers that enhance the capability and capacity of the first three groups. The ecosystem is expected to facilitate further research and identifications of initial action plans to strengthen the micro sourcing implementation. It will also demand for an active role of the government in supporting this industry into success.

Our next step is to synthesize a framework for development of local micro sourcing industry in Malaysia. Thus, the framework is intended to provide strategic directions at national level to all stakeholders, to highlight key areas that need to be addressed in order to grow a sustainable micro sourcing industry in the country and to serve as a guideline in the implementation of the programs and plans related to micro sourcing.

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#### REFERENCES

- [1] J. Howe, "Crowdsourcing: A Definition", Crowdsourcing: Tracking the Rise of the Amateur", 2006, URL (accessed 24 November 2012), [http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing\\_a.html](http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html)
- [2] T. Hoßfeld, M.Hirth, and P. Tran-Gia, "Modeling of Crowdsourcing Platforms and Granularity of Work Organization in Future Internet", Proceedings of the 2011 23rd International Teletraffic Congress, 2011.
- [3] C. K. Prahalad, "The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profit", Upper Saddle River, NJ: Wharton School Publishing, 2004.
- [4] R. Heeks, "Where next for ICTs and International Development?", In ICTs for Development. Paris: Organisation for Economic Co-operation and Development (OECD), pp. 29-74, 2009.
- [5] Crowdsourcing Industry Report, "Enterprise Crowdsourcing: Market, Provider and Worker Trends, Massolution, February 2012, URL (accessed 20 September 2012), <http://www.massolution.com>
- [6] Samasource, "Principles And Justifications For Socially Responsible Outsourcing", 2009, URL (Accessed on October 2012), <http://www.sourceoutpoverty.org/socially-reponsible-outsourcing-guiding-principles>
- [7] Frost and Sullivan, "State of Cloud Computing in Malaysia: Enterprises Heading for the Clouds", 2009, URL (accessed 24 October 2012), <http://www.slideshare.net/FrostandSullivan/malaysia-heading-for-the-clouds>