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***Adoption of the Internet in rural NGOs
in Indonesia – A study on Internet
appropriation for rural sector reform***

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Abstract

Today rural sector reform is a paramount issue in Indonesian development. Yet, different social actors have different perspectives and stances towards it. Non-Government Organisations (NGOs) in Indonesia have established themselves in pivotal positions in the social, economic and political landscape across the country, and a large number of their works has often been connected with development in rural sector. But, little has been studied to understand how NGOs in Indonesia, particularly rural NGOs, engage with the issue of rural development itself. With the rural development being one of the oldest issues widely discussed among activists since the early days of the Indonesian NGOs, it is interesting to see how they understand the rural sector reform issue today. An empirical study was conducted recently to see how some Indonesian NGOs, in their endeavour to respond and broaden the discourse, utilise Internet technology. The study employs combination of quantitative and qualitative approach to build a detailed story about how different organisations working in the rural sector reform issue deploy strategies to deal with the issue. By so doing, it aspires to contribute to the advancement of theory relating to the efficacy of Internet as a tool for social reform and development. Two related issues are at stakes. First, amidst everything else, for most NGOs working in rural sector reform, technology is not seen as a compelling issue. Second, the study finds that there is a real need for a further thinking and reflection focusing on what can actually be done with the strategic implementation of the Internet within organisations working in rural issues generally.

Keywords: adoption, civil society, civil society organisations (CSOs), diffusion, farmers, Indonesia, Internet, non-governmental organisations (NGOs), rural sector reform.

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1. Introduction

Any paper on development in Indonesia must take into account the fact that nearly 50% of the labour force works on (or more than 65% of the total population is engaged in) rural activities¹. However, stories told from rural sector are not always pleasant; in fact many are bitter. Rural sector in Indonesia has been characterised by farm labour with small productivity, and that, as a consequence, the rural inhabitants' standard of living is very low². Rural land also mostly becomes deteriorated as a result of the 'green revolution' carried out desperately by Indonesian government since late 1960s to the end of 1980s. Following the oil-boom, with national development policy in favour of industrial-oriented over agrarian-based development, not only more farmers convert into factory workers, but significant area of farming land has also been continuously converted into industrial estates. These are among severe problems hampering Indonesian rural development today, which attracts not only government's and private sector's attention, but also non-governmental organisation (NGO).

Indeed, Indonesian NGOs' important role in the country has been widely recognised, not only in promoting for wider democracy and adherence to human rights (Ganie-Rochman, 2002), but also in development, empowerment and improving of livelihood (Eldridge, 1995; Hadiwinata, 2003). For NGOs working on rural issues, reforms in rural sector have become a main agenda to response multifaceted problems hindering rural development. However, 'reform' in rural sector entails many aspects and brings about intricate characteristics in rural NGOs' activism. To help them deal with such a complexity many rural NGOs have been adopting and using Information and Communication Technologies (ICTs), particularly the Internet. They face emergent opportunity to use the Internet to support their quests for rural sector reform. Rural NGOs have to learn how to appropriate the technology more strategically and politically to achieve this mission.

Although there have been some studies on the Internet and socio-political dynamics in Indonesia (Hill, 2003; Hill and Sen, 2000; 2005; Lim, 2002; 2003a; 2003b), very few has been known about research targeted systematically on how Indonesian NGOs working on rural sector use the Internet to achieve their mission and goals. This paper aims to fill this gap. Exploring the case of NGOs working in rural sector in Indonesia, this study aspires to contribute to the advancement of theory relating to the efficacy of Internet CMC as a tool for social reform and development. This section has outlined the focus and concern of the paper. The next section lays down NGOs agenda in rural sector reform, followed by how NGOs adopt and use the Internet to achieve that purpose. To make the case clearer, some detailed accounts are presented. Then discussion and reflection on some implications is offered before the paper concludes.

2. Development to empowerment: NGOs agenda in rural sector reform

Rural development is an area in which Indonesian government plays a major role, especially during Suharto's New Order regime, since the late of 1960s. Due to the food scarcity resulted by poor political economy and population explosion, rural development

¹ See National Statistics Bureau, "Population 15 Years of Age and Over Who Worked by Main Industry 2004, 2005, 2006 and 2007", online at <http://www.bps.go.id/sector/employ/table2.shtml>, viewed 20 June 2007.

² This problem is one of the most classical problems in rural development in the East. See, for example, Boeke (1952).

was orientated for ensuring food security, much by the intervention of the government³. Aiming to enforce agriculture intensification through high-yielding seeds, subsidised fertilisers and irrigation systems as part of green revolution, the government established programmes such as *Bimas* (*bimbingan massa*, mass guidance) and *Inmas* (*intensifikasi massa*, mass intensification) (Booth, 1992). By the early 1980s through various programmes under *Inpres* (presidential instruction), the government changed the face of most villages by providing them with roads, village-halls, schools, health-centres, markets and so on (Liddle, 1985). In addition there were also interventions aimed at creating state-sponsored grassroots organisations such as LKMD (*lembaga ketahanan masyarakat desa*, village people's defence council), PKK (*pembinaan kesejahteraan keluarga*, family welfare guidance), *Dasawisma* (neighbourhood association), *Karang Taruna*, and the likes (Hadiwinata, 2003).

Many argue that such intervention, in long term, has in fact brought detriments more than benefits. First, agricultural produces became highly politicised⁴, making peasants in vulnerable circumstances politically. Second, although the implementation of green revolution, for a short period, was successful, this did not last long as the country has turned out to be the major rice importer in the world⁵. Third, yielding more rice is simply impossible because a vast area of agricultural land loses its fertility due to the poor chemical treatment and high-yielding seeds under the farming intensification schemes. Fourth, there were no genuine, independent grassroots groups or organisations in rural area which was important to build a healthy fabric of social life. Instead, rural society was torn apart⁶.

This all has contributed to the decreasing and deteriorating life quality of rural people for farmers become incredibly poor and powerless. Unfortunately, the misery multiplied. As a result of industrialisation policy, a massive area of agricultural land was converted into industrial estate or urban housing quite easily because farmers have very weak bargaining position to defend their land against demand from industry or the rich 'people from the city'. Young villagers went to the cities to look for 'better jobs', mostly as factory labourers or casual workers in informal sectors, and left the villages nearly without future. Since the 1998 reform, despite government's claim to have been trying to 'revitalise' rural sector development, the situation does not get any better. Farmers are still poor –and even become poorer; agricultural land has not reclaimed its fertility; agricultural produces are still politicised; conversion of rural land into non-agricultural purposes continues; rural civil society remains weak; farmers are politically neglected despite villages being used as voter sources, and so forth.

Non-governmental organisations (NGOs) in Indonesia have been long concerned with rural development issues and problems as such. Started in the early of 1970s, a number of NGOs like *Bina Swadaya*, LP3ES, *Sekretariat Bina Desa*, *Dian Desa*, and many

³ Usually, interventionist state attempts to control rural sector by establishing powerful agencies to monopolise rural community development activities (Arce et al., 1994).

⁴ In many instances government and the ruling party (i.e. Golkar) used rice issue as political commodity (Sangkoyo, 1999)

⁵ Indonesia became a major rice importer in 1996, after the failure of various programmes to boost production. Government statistics show that rice imports hit a peak of six million tonnes during the crisis period of 1998. The figure fell to four million tonnes in 1999 and 1.5 million tonnes in 2001. This is a set back because Indonesia won a FAO medal for the achievement of 'self-sufficiency' in rice in 1985 (Daorueng, 2002)

⁶ The New Order's intervention also transformed the nature of rural society, marked by the emergence of rural elites as a class of favoured clients of the state (whose activities were under guidance 'from above' and increasingly became implementers of government's programmes) and rural lower society who were commonly poor (Hart, 1986)

others were established and focussed their activities on rural issues and community development, and promotion of self-management activities at village level (Hadad, 1983; cited in Hadiwinata, 2003:91)⁷. During New Order regime, many of these organisations had to adopt 'friendly' strategy by not engaging in grassroots political activities, partly because of the repression of the government to NGOs⁸. But throughout the 1990s, many Indonesian NGOs, including those working in rural sector, started adopting more frontal strategies and openly expressed their opposition to government's policies in rural development. Military often assumed rural NGOs' activities at village level (as well as labour NGOs at regional or factory level) aimed at organising local grassroots and thus masked political agitation (Billah, 1995). Subsequently, for the last 10 years or so of its political power, Suharto's New Order launched 'black-propaganda' against NGOs, often conducted with violence and repressions towards their activists. But this situation slightly became favourable for Indonesian NGOs after *reformasi* (political reform) in 1998. Seen as part of important actors that mobilised various elements in Indonesian civil society to overthrow the authoritarian regime (Hill, 2000; Uhlin, 1997), NGOs regained some trusts from wider society who used to be 'under-influence' of New Order's anti-NGO campaign. Despite some difficulties, Indonesian NGOs managed to pin down their pivotal roles in socio economic and political dynamics of the country, much by their role in continuously advancing reform agenda.

For NGOs, the aim for rural sector reform is primarily to improve rural livelihood and to restore economic, social, political and cultural rights of the rural communities. The aim is not just food security (as campaigned by New Order) but food sovereignty, which requires the fulfilment of farmers' rights and new orientation towards sustainable rural development. This is done through two approaches. One is '*negative-logic*' approach: criticising and being against the negative aspects of rural development policies and practices. The other is '*positive-logic*' approach: promoting alternative practices in rural development.

In their first approach, rural NGOs in Indonesia often take risks to be misunderstood as anti-development for their consistent critical stands towards status-quo rural policies and development practices. These NGOs carry out advocacy towards farmers' rights; take stance in favour of agrarian reform to reclaim farmers' lands; oppose further agricultural land conversion; support farmers' union activities and empower rural civil society through research, lobbies and advocacy endeavours (Eldridge, 1995; Ganie-Rochman, 2002; Hadiwinata, 2003) and thus are often categorised as *rural-advocacy NGOs*⁹. On the other hand, using positive-logic approach, NGOs help with farming trainings to farmers, provide support for rural home-industry or small-medium enterprises (SMEs,) and help with better access to marketplaces. They provide assistances and modalities so that farmers can learn more about organic and sustainable farming processes, and restore soil fertility; help with access to micro-credit schemes for women in rural areas;

⁷ Most of them were initiated by concerned activists including religiously-inspired groups like Christian/Catholic churches and Islamic groups, aiming at developing a capacity for co-operation among community groups (Billah, 1995; Sinaga, 1994).

⁸ This include the decree no. 81/1967, enforced by state's regulation on Overseas Technical Co-operation and Assistance issued by the Ministry of Home Affairs 7 September 1973 (Hadiwinata, 2003:91-92). Then, in 1985, the government issued *Inpres* No. 32/1985 to filter any overseas co-operation (Sinaga, 1994), followed by the Law on mass organisations, UU Ormas No 8/1985 which was viewed as controversial as it was seen as blatant effort of the state to 'de-ideologise' and 'de-politicise' NGOs by forcing them to adopt *Pancasila* as sole ideology (Hadiwinata, 2003; Sinaga, 1994). This law was soon furthered by government regulation PP No. 18/1986 which required all NGOs without exception to register themselves with the government and a joint decree (*surat keputusan bersama*) SKB 1995 between Ministry of Home Affairs and Department of Social Affairs obliging NGOs to accept government's supervision (Hadiwinata, 2003).

⁹ Interview with Muhammad Riza, 30/11/2005; Indro Surono, 3/12/2005.

empower rural communities politically; and –in limited extent—ensure agricultural produces being fairly traded (Hadiwinata, 2003)¹⁰. Non-governmental groups and institutions which undertake such activities are generally known as *rural-development NGOs*¹¹.

These different approaches enrich NGOs movement in rural sector. The shared belief between these different NGOs is that for rural sector reform, development orientation is not enough. Instead, it is empowerment that becomes crucial in making sure that reform in rural sector will benefit the farmers and the whole society, and thus becomes the call for all NGOs working in rural issues. As reflected by an NGO below in its hindsight about its activities,

We contribute in this context, particularly in empowering peasants. ... There are various ways to do so, but in order to empower them we need to help the farmers to help themselves in self-organising and self-mobilisation, then [we must help them with] good access to marketplaces using mechanism like quality assurance [for agricultural produces]. [We realise that] In the bigger context of rural movements what we have done is just a small part because we focus only on the empowerment of production and economic aspects. For other aspects that need empowerment, we have to collaborate with other NGOs or farmers organisations (Indro Surono, interview, 3/12/2005)

What Indro Surono said above represents many other NGOs' retrospection on the matter. Certainly, having to focus on particular and limited aspects in their endeavour to promote rural sector reform, does not always make NGOs lose the big picture of their activities. Even, it becomes clearer.

[In our development activities] we apply some standards which actually reflect the socio-architectures of the problems, social justice that we aim to achieve. This all is part of our blueprint in promoting organic and sustainable agriculture. So, it is clear that social justice is structured in our organic movement. It is the same with our other activities like quality assurance for organic agricultural produces as it implies strong organisation of farmers. We want the farmers strongly organised to fight for their own rights. We work on this issue with other rural [advocacy] organisations. If farmers have strong associations or organisations, they can build their own internal mechanism. Externally, this strengthens their bargaining positions. Thus, while we work on quality assurance, other colleagues are working on strengthening farmers organisations. That's how we work (Agung Prawoto, interview, 3/12/2005)

Two reflections above may indicate an emergent strategy, which is not entirely new, but certainly has a new meaning and contextualisation: networking of movement for rural empowerment. Such a strategy, while effective, requires, or presumes to be more precise, a relatively high-degree of co-operation and collaboration. For example, while nearly all rural development NGOs activities assume existing organising endeavour (*pengorganisasian*), likewise, many rural advocacy NGOs deduce that development-aspects of the communities are being dealt with by their developmentalist colleagues. Thus, at networking level, rural NGOs come together to share different issues or problems faced by farmers and thus can solve them more properly. For instance, problems related to economic aspects or access to markets are usually best resolved by development approach and problems related to political aspects or development policy

¹⁰ Interview with Antonius Waspotrianto, 28/10/2005; Indro Surono and Agung Prawoto, 3/12/2005; Yulia I. Sari, 19/12/2005.

¹¹ In general, not only for rural NGOs, this categorisation (advocacy and development NGOs), although may be too simplified, apparently works both in practice and also for analytical purpose (Eldridge, 1995; Ganie-Rochman, 2002; Hadiwinata, 2003; Holland and Henriot, 2002)

are mostly tackled by advocacy approach (as also suggested previously by Billah, 1995; Fakhri, 1996). Such an approach is not only beneficial for NGOs that they can collaborate and network more effectively, but more importantly for farmers and rural communities that they increasingly become aware that development (or economic) aspects is strongly tied and influenced by advocacy (or political) aspects in rural reform and development. This is important so that the farmers can engage themselves more effectively, more independently, and thus more meaningfully in the socio-dynamics of development and reform in rural sector. Especially, in the recent political economy development where rural sector is no longer subject exclusively to national development policies, but increasingly regulated within the World Trade Organisation (WTO) under AOA (Agreement on Agriculture)¹² (Kwa, 2004).

It is important, thus, for NGOs to focus their endeavour to empower the farmers and rural society so that they can have a say in deciding their own life, as reflected below.

[We envisage that] one day it would be the farmers who are able to carry out advocacy works for themselves, to protect them from government repression or brutal [implications of] globalisation in rural sector. But we have to start building this ability now. We have to start by involving them to understand, become aware of, and identify the actual problems [in rural sector reform]. Then, we have to encourage them to find the solutions of their own, and communicate them to the communities through dialogues. Only by doing this we can stop the dependency vicious circle. Farmers used to be dependent on the [New Order] regime and now there are apparent dangers that they can be dependent upon NGOs. We have to avoid this. (Muhammad Riza, interview, 30/11/2005)

It seems clear that the orientation of rural sector reform, for NGOs, is more of empowerment rather than merely development. This implies a strong building block of rural NGO movement so that the empowerment endeavour can be carried out effectively. Either for pursuing development goals or organising advocacy activities, the use of the Internet in rural NGOs has increasingly become more instrumental. The use of the technology has enabled the organisations not only to spread their concern about rural sector reform across the country in a speed and scale that has never been before, but also to help them network with other similar organisations in various levels, from local to global, to exchange ideas, experiences and supports. A profound example is Indonesian rural NGOs' engagement with *La Via Campesina*, a growing international peasants movement network, which not only furthers rural sector reform agenda at national level in Indonesia, but also advances the rural issues and integrate them at global level¹³.

¹² AOA, which is currently part of the new WTO trade round launched in November 2001, has elements that are likely to be problematic for Indonesia, e.g. (i) another round of reduction in tariffs; (ii) possible measures that could ensure State Trading Enterprises (STE), such as BULOG (Indonesia's STE for rice and other sensitive commodities) from having import monopoly powers; (iii) very little, or no real disciplines on *Domestic Supports*, e.g. no overall caps or limits on the *green box spending* is being discussed for the developed countries (which means that dumping of cheap agriculture produce by the US and EU into developing countries will continue, and could even increase); and (iv) *Special and Differential Treatment* for developing countries under discussion, e.g. the concept of Special Products and a Special Safeguard Mechanism (spearheaded by Indonesia) is extremely inadequate since these are merely band-aid measures. Food security and rural livelihoods cannot be limited to a small number of crops but should encompass the broad range of products small farmers produce. See (Kwa, 2004).

¹³ *La Via Campesina* means "the road of the peasants" and is the international movement of peasants, small- and medium-sized producers, landless, rural women, indigenous people, rural youth and agricultural workers. *La Via Campesina* defends the values and the basic interests of farmers. Its members come from 56 countries in Asia, Africa, Europe, and America. The objectives of *La Via Campesina* is to develop solidarity and unity among small farmer organisations in order to promote gender parity and social justice in

It can be argued, however, that these recent developments in rural NGOs activities both at national level and global level as presented above, while somewhat is a result of the engagement with their international counterparts, is also very much consequence (intended or unintended) of the use of information and communication technologies (ICTs), particularly the Internet, in the organisations. Obviously, the Internet not only facilitates communication and collaboration of organisations within and between countries (Castells, 1996; Dutton, 1999; 2004; Warkentin, 2001), it also contributes to the spread of issues and concerns (Dutton, 2004; McConnell, 2000; Surman and Reilly, 2003) and thus play role in the change strategy of the movement.

3. Internet for rural empowerment

NGOs and civil society organisations (CSOs) have been active users of the Internet since the early days of its introduction in Indonesia (Hill and Sen, 2005; Lim, 2003b; Purbo, 1996). Yet, not much is known about how and to what extent Indonesian NGOs, particularly those working in rural issues, use the technology, let alone the implications. By triangulating quantitative and qualitative methods (Danermark et al., 2002; Gilbert, 1992), this study aims to explore the features of the diffusion, use and impacts of the Internet in Indonesian NGOs¹⁴, especially in relations to advancing rural sector reform. The survey was conducted with a wider range of NGOs, i.e. rural and non-rural NGOs, to look at the bigger picture of how NGOs in general use the technology and what are the implications. A closer observation and case study is drawn to look at more detailed accounts on the strategic implementations of the technology. In explaining the findings, this study relies mainly on diffusion theory (Rogers, 2003) and information systems strategising (Galliers, 2004; 2007).

3.1. Internet adoption in NGOs and its impact¹⁵

From a survey of 268 Indonesian NGOs where 94.03% use PCs in the organisation and 86.94% have access to the Internet, only a very small group has used the Internet for more than 10 years (5.97%). Most of them have used it between 5-10 years (28.73%) and 3-5 years (26.87%). Quite a proportion (19.03%) just started using it within the last 3 years¹⁶. See Table I.

Table 1: Adoption of ICTs in Indonesian NGOs

| Information Technology adoption | Length of adoption (years) | | | |
|---------------------------------|----------------------------|--------------------------|------------------------|-----------------|
| | >10 (leaders) | 5-10 (early majority) | 3-5 (late majority) | <3 (laggard) |
| PC | 21.64% | 35.45% | 24.25% | 10.82% |

fair economic relations; the preservation of land, water, seeds and other natural resources; food sovereignty; sustainable agricultural production based on small and medium-sized producers. Since 1994, its secretariat is in Jakarta, Indonesia. See <http://www.viacampesina.org/>.

¹⁴ The quantitative data was gathered through an exploratory survey, and served as input for some statistical observation including exploratory latent-class using *Latent Gold*® (MacCutcheon, 1987; Vermunt and Magidson, 2002) and temporal social network using *Pajek*® (Batagelj and Mrvar, 2003). The qualitative data was collected through interviews, workshops, and focus group discussions to build case studies (Eisenhardt, 1989; Stake, 1995). The overall data collection was carried out Oct 2005-April 2006.

¹⁵ For more detailed account, see Nugroho (2007a)

¹⁶ This finding confirms the pattern of technological adoption suggested by diffusion theory –with ‘innovators’ and ‘early adopters’ (here referred to as ‘leaders’) leading the adoption, followed by ‘early majority’, ‘late majority’ and ‘laggards’— which forms a *bell-curve* and, cumulatively, *S-curve* (Rogers, 2003).

| | | | | |
|---------------------|-------|--------|--------|--------|
| The Internet | 5.97% | 28.73% | 26.87% | 19.03% |
|---------------------|-------|--------|--------|--------|

N=268; classification of adopter based on diffusion theory (Rogers, 1995; 2003)

But, what makes 'leaders' and 'laggards' (for this classification, see Rogers, 1995; 2003) in the Internet adoption? This study finds that leaders in the Internet adoption among Indonesian NGOs are usually those who (i) are longer established, (ii) have more staff, and (iii) manage more money. See parameter estimation (using MIMIC-LCA) in Table II (See also Appendix 1).

Table 2: Characteristics of Indonesian NGOs as adopter

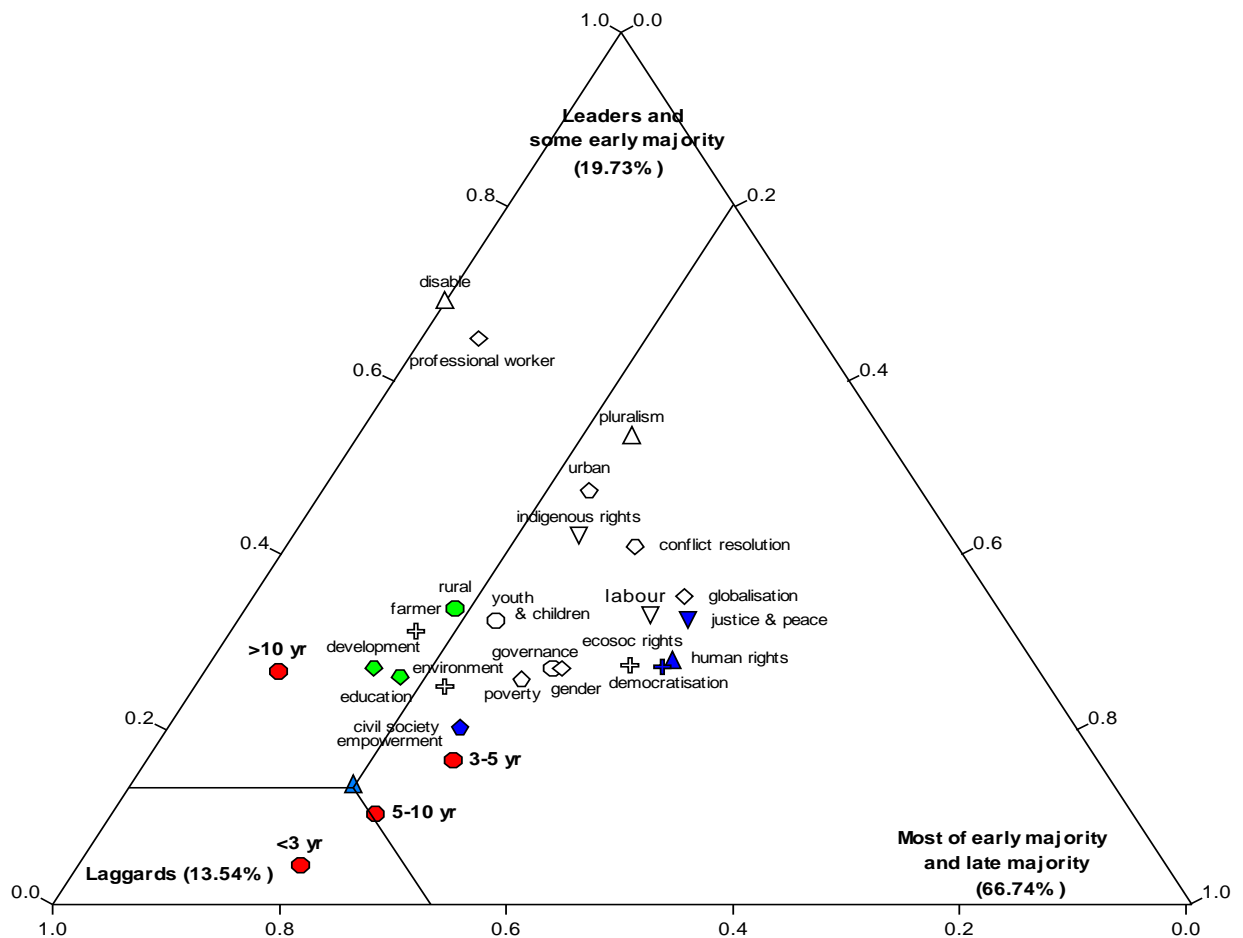
| Estimated Variables | Late majority and laggards (75.56%) | Leaders and early majority (24.44%) |
|--|--|--|
| <i>Period of Internet use (years)</i> | <3; 3-5 | 5-10; >10 |
| <i>Age of the organisation (years)</i> | 0-1; 1-2; 2-5; 5-8; 8-10 | >10 |
| <i>Number of staff (persons)</i> | <5; 6-10; 11-15 | 16-20; 21-25; >25 |
| <i>Annual turn over (IDR)</i> | <100 million; 100-500 million | 500 million - 1 billion; 1-2 billion; >2 billion |

N=268. Latent Class Analysis. BIC(LL)=1816.7598; NPar=42; L²=1096.296; df=179; p<0.0001; and Class.Err=3.9% (See Appendix 1)

While this contradicts to what diffusion theory suggests that 'earlier adopters are not different from later adopters in age' and may disagree with the view that 'economic factors do not explain comprehensively innovation behaviour', it supports the idea that 'early adopters usually are larger in units' (Rogers, 2003:288-289).

Still within this line of quest, this finding brings a central question: does this pattern of adoption have anything to do with the issues and concerns that these NGOs are working on? It seems so. Fig 1 below shows that in general NGOs working on development or development-related issues and concerns (salient issues are coded green) are estimated to be more likely to be early adopters of the Internet, than those working on advocacy-related issues (coded blue)¹⁷. A closer look at the figure shows that NGOs working around rural-related issues (farmers, rural, environment, poverty, civil society empowerment, and so on) are part of 'early majority' group in terms of Internet adoption.

Figure 1: Issues and concerns of each adopter category



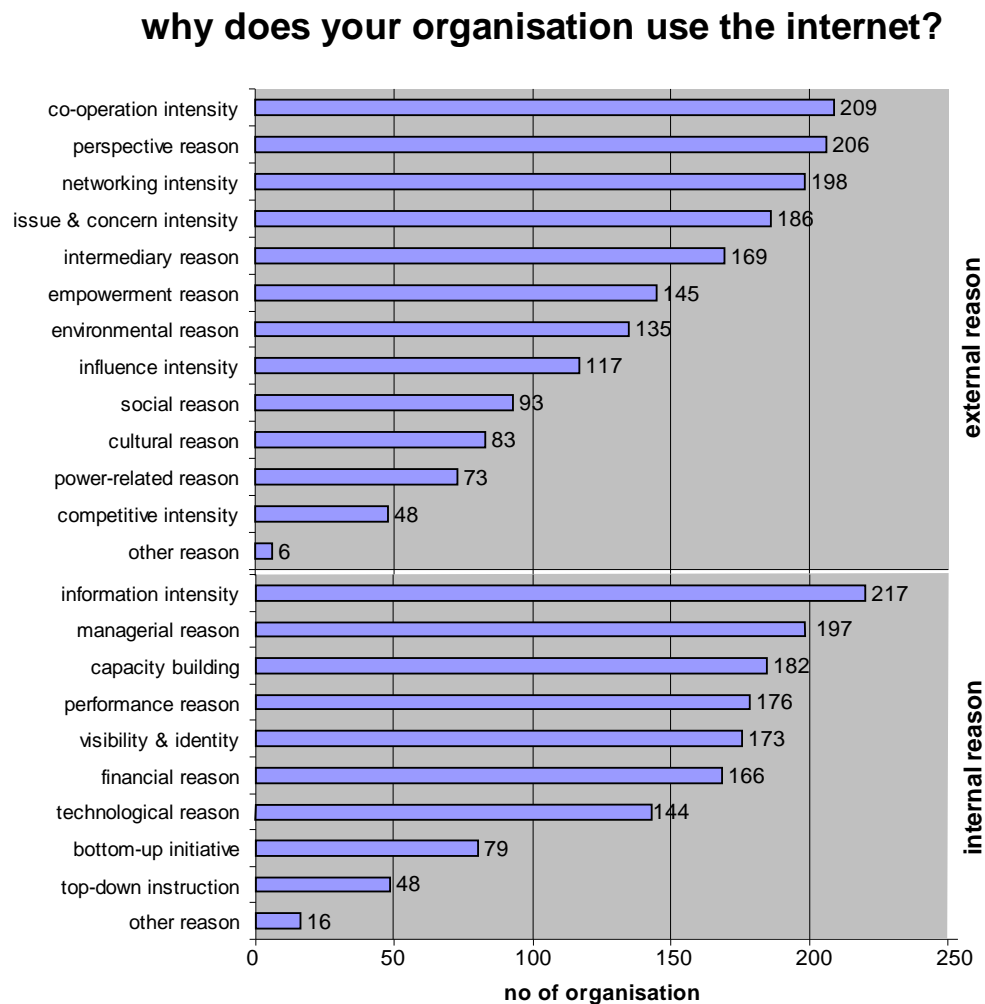
N=268. Latent Class Analysis. BIC(LL)=5407.792; NPar=94; L²=4214.830; df=127; p<0.0001; and Class.Err=2.6% (See Appendix 2)

But, what actually drives the adoption of the Internet in Indonesian NGOs in general? Internally, it is the need to obtain information and to improve organisational effectiveness

¹⁷ See Appendix 2 for more detailed account. However, it should be taken into account the fact that in the early days of the Internet use in Indonesian NGOs, it was advocacy organisations that pioneered the use of the Internet for pushing social movement. Interview with Wahyu Susilo of INFID (1/12/2005) reveals the birth of *Nusanet* initiated by INFID as the first secure communication exchange platform for civil society activists. *Nusanet* played an undeniably important role for Indonesian CSOs in establishing links with their partners across the archipelago in order to fight for democratisation and across the globe for mobilising global solidarity, especially in overthrowing the New Order regime.

and efficiency; externally, it is the need to bring about mutual relationship and collaboration among organisations instead of competition. Fig 2 below maps all the drivers for adoption, internally and externally.

Figure 2: Internal and external reasons for adopting the Internet

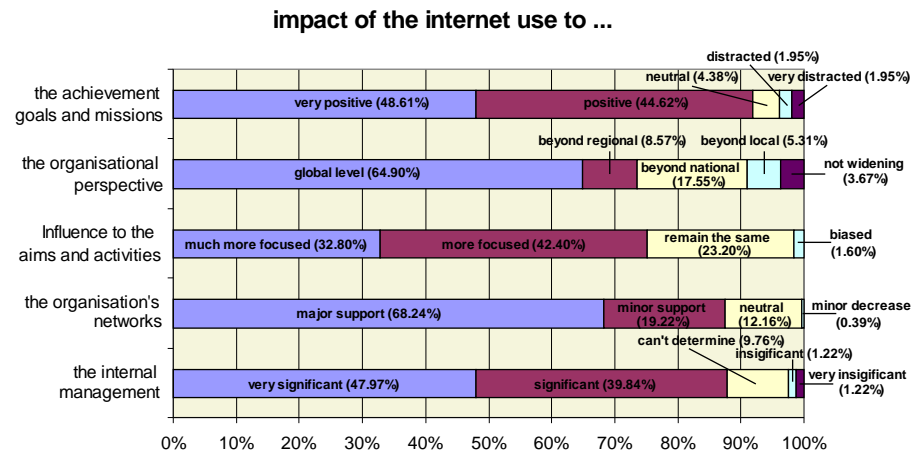


N=268, multiple responses possible

Although Indonesian civil society is not absent from conflicts and frictions in interest, organisational need for social esteem or status and egocentric and competitive motives are not strong drivers for Internet adoption in NGOs, unlike in other types of organisations (as found in, e.g. Coombs and Hull, 1996; Newell et al., 2003; Rogers, 2003). It seems clear that for Indonesian NGOs, adopting the technology which serves such internal and external purposes (see Fig 2) empowers them in organising their movement, expands their network, and, to some extent, therefore increases their bargaining position when dealing with other actors in Indonesian politics. The survey shows that more than 92% of Indonesian NGOs under study, who have used the Internet, find that the use positively or very positively affects the achievement of the organisations' goals and missions. It is also found that the Internet use significantly or very significantly increases the performance of the internal management of more than 87% of NGOs in this study and helps nearly 75% of them to become more focus or much more focussed in their aims and activities. But more importantly, it has widened nearly two-third of the NGOs' perspective to global level or at least beyond regional,

national or local boundary. As consequence, the use of the Internet has become mainly major support for NGOs' networks expansion. See Fig 3.

Figure 3: Impact of the Internet use in Indonesian NGOs



N=268, single response, Likert-scale

It is evident that Indonesian civil society, including NGOs, has expanded its network significantly over the past decade. Not only that more links are established nationally and globally, but the network also becomes more cohesive over different periods of democratic transformation in the country. Fig 4 puts this network expansion into some perspectives. Major socio-political events took place in Indonesia during the heightened period from post-1995 to 1998 and significantly affected, but were also affected by, civil society activism (as also reported by Harney and Olivia, 2003; McCarthy, 2002)¹⁸. This study argues that these socio-political events are both outcomes and fabrics of the socio-political engagement of Indonesian civil society. As outcomes, the events reflect how Indonesian civil society has advanced their movement and partaking in the social change. As fabrics of civic engagement, such socio-political events provide context and opportunity for Indonesian civil society organisations to link each other's work. Here lies the central explanation on the growth of its national network: the network is not just instrumental to the social change in the country; it is the arena for change on its own right, including in rural sector. There is similar trajectory and similar storyline in international networking, but with different story. Networking between Indonesian civil society and their international partners has been around for a quite long time (Billah, 1995; Fakhri, 1996). By means of such network, local organisations voiced their concern or passed relevant information about socio-political problems (usually related to state's violence, human rights violation or development policies) onto their international partners who would use the information to pressure Indonesian government in international gatherings through their own governments or by way of protests¹⁹. The network with

¹⁸ Fig. 4 depicts the national context of the network growth. From the massive rally of "democratic opposition" responding to the occupation of the Indonesian Democracy Party (PDI) office following the military-backed up attack on 27 July 1996 (Hosen, 2003:488), to the massive riots in mid May 1998 (Johnson, 1998:8-9), to "Semanggi II" massive protest in November 1999 (Cameron, 1999:5), Indonesian NGOs were actively involved. Indonesian NGOs also welcomed the first democratic election since 1966 taking place in 1999 (Hill, 2003), gathered support during the political crisis leading to the impeachment of President Abdurrahman Wahid (MacDonald and Lemco, 2001:178-180), and played important role in widening public participation during the first direct Indonesian Presidential Election in 2004 (Wanandi, 2004).

¹⁹ For profound example, see "Brussels incident", when perceived powerless Indonesian NGOs used international network to question Indonesian government's development policies during a multi-lateral meeting (Hadiwinata, 2003:98-100) – something that would have never happened in Indonesia.

international partners has been able to give Indonesian civil society some bargaining power to challenge the authoritarian regime and, arguably, to contribute to the efforts in bringing it to an end.

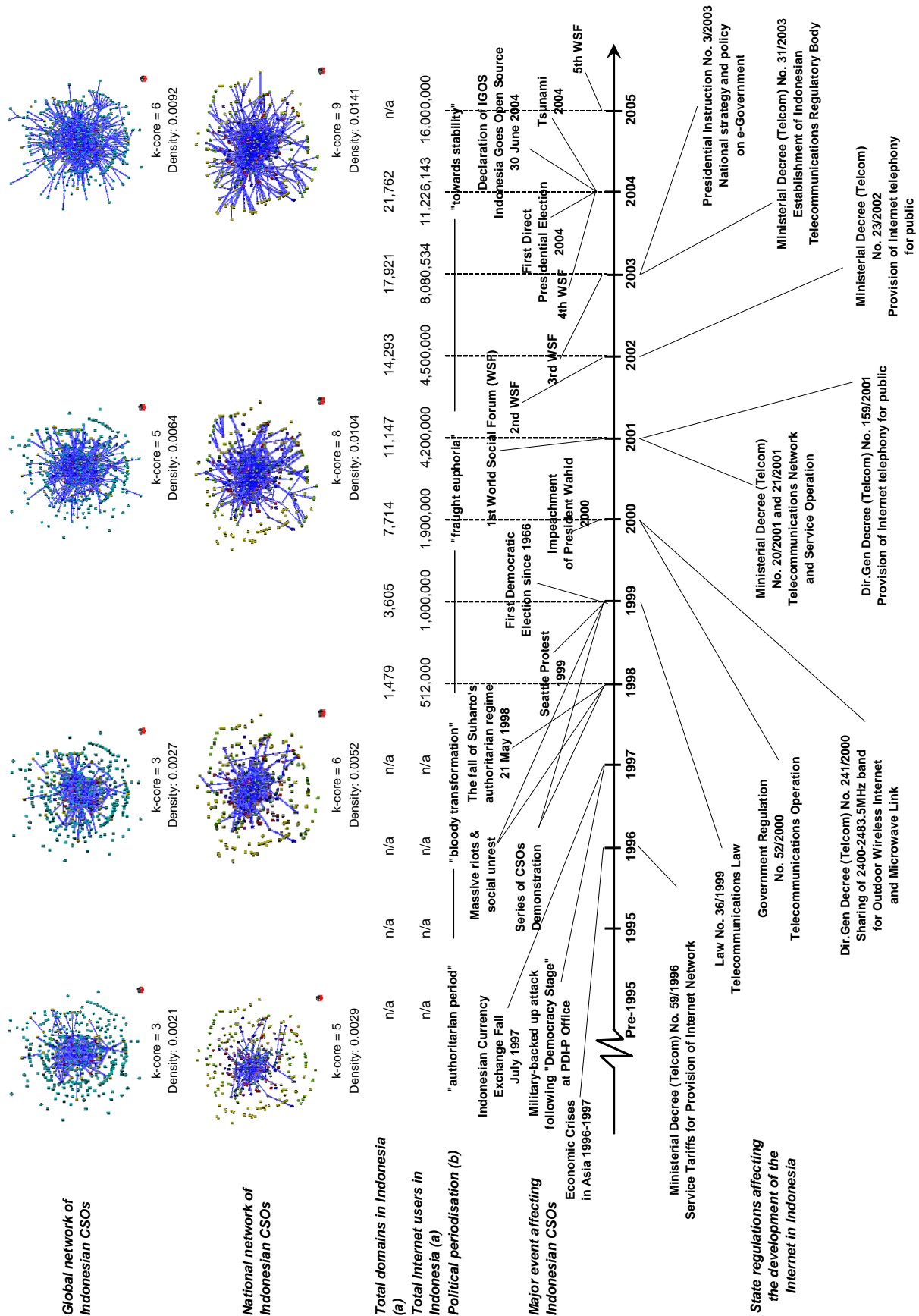


Fig. 4. Internet, Civil society organisations (CSOs) Network, and socio-political dynamics: A timeline

(a) (APJII, 2005); (b) (Nugroho and Tambubolon, 2006); This figure appears in Nugroho (2007a)

Despite questions about the role of international network during the heightened period of change in Indonesia prior 1999 (e.g. as addressed in Nugroho and Tampubolon, 2006) the cease of authoritarian regime has given new impetus for more involvement of the global civil society with national politics²⁰. But, this is not the only factor affecting the trend in the global networking of Indonesian civil society. Instead, and more essentially, it is the participation of Indonesian organisations in many global civil society events criticising globalisation-led development issues and policies, including in rural sector, which actually matters. Participation of Indonesian civil society, including rural NGOs, in parallel meetings challenging multilateral or world summits (such as in Seattle in 1999), as well as attendance in the series of World Social Forums (since 2001), arguably contributes to the growing global NGOs network with Indonesian groups as suggested by Fig. 4. In this sense, civic engagement in the global level seems to be both outcomes and means of global civil society networking.

These findings above might explain why, despite problems in access and availability of the Internet, civil society seems to be a sector that use the technology dynamically, aiming to facilitate social changes in the country (Hill and Sen, 2000; Lim, 2002; 2003b; Marcus, 1998) –which is also true in rural sector. But how exactly do NGOs adopt and implement the technology?

3.2. Implementation and appropriation of the Internet in Indonesian NGOs

Rogers' theory in 'innovation process in organisation' (1995; 2003) is revisited in the context of Indonesian NGOs adopting the Internet²¹. From observation of a number of Indonesian NGOs, the study finds that while maintaining the number of the stages as suggested by Rogers, these stages contain different substance, hence conceptualised differently²².

- *Stage-One*: "awareness building" – reflects the active process of NGOs to search for comprehension of the innovation because the adoption of technology is driven mainly by the needs and context in which NGOs operate, i.e. fostering reform and social movement.
- *Stage-Two*: "attitude formation" – is the phase where NGOs form their attitude towards the Internet as technological innovation: they 'fine-tune' with its characteristics, exploit its features and put it within the context of their needs.
- *Stage-Three*: "adoption" – suggests the stage where NGOs adopt the Internet in full as they believe in the *idea* that Internet is beneficial. Instead of having 'probationary period', NGOs just familiarise themselves with the technology (through *trial-and-practice*) and customise it to meet the needs of the organisations.

²⁰ More global NGOs paid more attention to the Indonesian situation and established networks with Indonesian NGOs. Figure 6 reveals the context: not only political events like elections in 1999 and 2004 became opportunity for networking with global NGOs (be it in terms of financial support, coalition, joint activities or other types of collaboration), humanity relief actions too have been always important junctures for networking. The aftermath of Tsunami 2004 saw a massive scale of global NGOs networking with Indonesian organisations, possibly unprecedented in the country's civil society history.

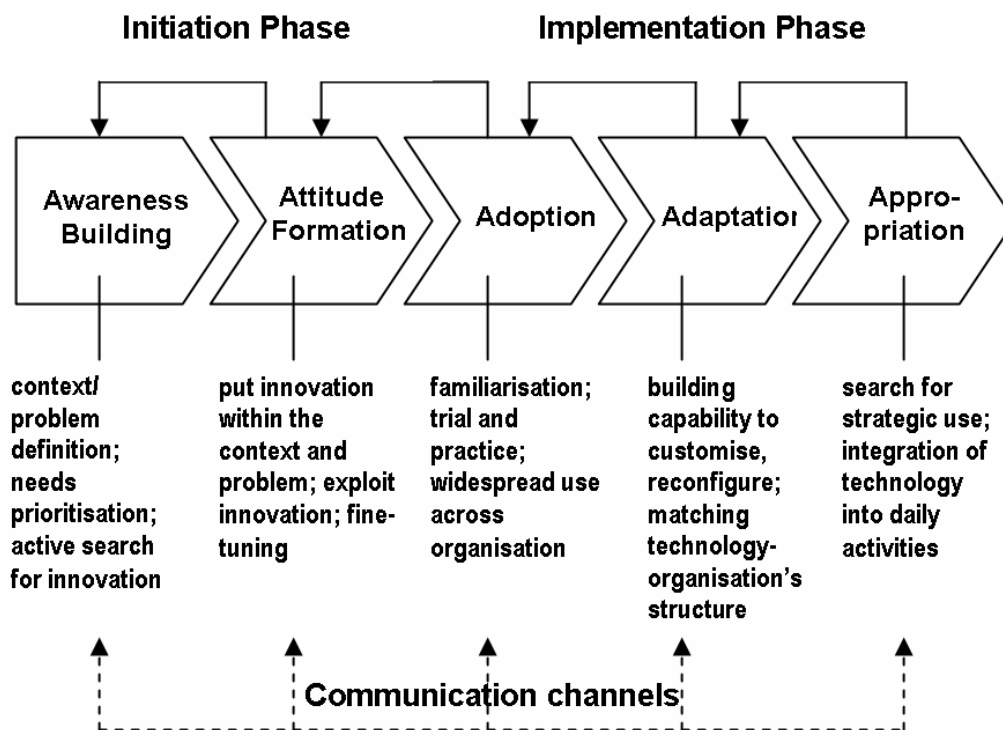
²¹ Diffusion of innovations theory suggests five stages of innovation process in organisation, i.e. the phases where organisation traverses from adopting an innovation to implementing it. These stages are (i) agenda setting, (ii) matching, (iii) redefining/restructuring, (iv) clarifying, and (v) routinising (Rogers, 1995; 2003),

²² In total, there were 35 civil society organisations (CSOs) being observed directly and indirectly, but not all of them were rural NGOs. However, the stages suggested here were prevalently found across the observation. For more detailed account, see Nugroho (2007a).

- *Stage-Four*: “adaptation” – reveals the point where NGOs not only fit-in, but also adapt the Internet according to their needs. Here NGOs build their capability to configure and reconfigure the technology that allow for furtherance and elaboration of the organisation's goals, strategies and activities.
- *Stage-Five*: “appropriation” – indicates the stage when, after adaptation, NGOs take additional effort to further customise the technology strategically to addresses specific, long-run needs of the organisation. Appropriation here means ‘strategic use’, where the NGOs turn the Internet to their purposes, utilises it to achieve their own objectives and makes it their own.

These innovation-decision stages as empirically suggested by this study, however, are not in linear fashion. At any phase NGOs may reverse the decision and/or return to previous stages according to the particular circumstances in which they work. See Fig 5.

Figure 5: Stages of adoption and implementation of the Internet in Indonesian NGOs



Empirical observation, informed by Rogers' innovation-decision framework (1995; 2003). This figure appears in Nugroho (2007a)

Fig 5 summarises the empirical stages of innovation-decision process in the instance of Indonesian NGOs adopting the Internet as found in this study, informed by diffusion analysis framework (Rogers, 1995; 2003). *Initiation phase*, which takes place before implementation, is made up by stages of ‘awareness building’ (characterised by context/ problem definition, needs prioritisation, and active search for innovation) and ‘attitude formation’ (where NGOs put the Internet within the context and problem, exploit innovation, and fine-tune it with their need). Once the initiation phase is traversed, NGOs start implementing the technology through three important stages: adoption, adaptation and appropriation. In the adoption stage NGOs familiarise themselves with the Internet through trial and practice and use it across the organisation. Then, they adapt it, which means that NGOs build their capability to customise and reconfigure the technology so that its use matches the organisation's structure. The last stage in the implementation

phase is appropriation, when NGOs strategically use the Internet and integrate it into their routines. Here, it is about using technology in a strategic and political way to support the strategic and political work of civil society (as also suggested by Surman and Reilly, 2003; Warkentin, 2001)²³. The study maps five strategic areas where the Internet is used by Indonesian NGOs strategically and politically:

- *Collaboration* – Indonesian NGOs have been using the Internet to facilitate collaboration within and between organisations. Examples of strategic collaboration are networking and coalition building.
- *Mobilisation* – The Internet has been used by NGOs to mobilise grassroots for rallies, protests and for voluntary works, donation and petition. This is effective when NGOs target middle-class audiences like professionals, students or academics. In other words: campaigns and some urgent ‘calls for action’.
- *Empowerment and development* – The Internet has been an important information source for Indonesian NGOs to offer alternative opinions and perspectives towards development agenda and improvement of livelihood in sectoral terms (e.g. rural, urban, etc.) and in terms of issues (e.g. education, pluralism, etc.). Many NGOs also utilise the Internet to spread awareness and build capacity of the civic communities they work with.
- *Research and publication* – The Internet has been tremendously instrumental for NGOs research and publication activities. It facilitates information acquisition substantial for research (information in) and dissemination of publication (information out) which has brought new dimension in civil society movement in the country today.
- *Advocacy and monitoring* – Major NGOs working in advocacy has used the Internet to help shaping public opinion which is central in successful advocacy works. They also use the technology as a convenient means for monitoring activities as more information is available and transparent on the Net.

However, the boundaries between these five areas are naturally fluid and often become source for flexibility in NGOs activities (as also noted by Surman and Reilly, 2003).

These findings have made clear that the adoption of the Internet in Indonesian NGOs cannot just be taken for granted. What looks simple and straightforward in the surface of adoption and use of the Internet in NGOs has in fact subtle dynamics in the depth. The use of the Internet, arguably, has played an important role in positioning Indonesian NGOs in the contested field of rural sector reform. It enables them not only to criticise the discourse ‘from outside the field’ as observer, but more importantly, ‘from inside the arena’ as a player. A more detailed story, by taking a case study of a rural advocacy NGO, is given below.

3.3. Advocating farmers’ interest: An experience of Yayasan Duta Awam²⁴

Yayasan Duta Awam (YDA) is a local farmer advocacy NGO based in Central Java province but works in other regions, namely Riau, West Kalimantan, Bengkulu and

²³ However, it should be noted, that the strategic realm of NGO movements actually stems from ‘traditional strengths’ of civil society sector, like pertinent issues and concerns, tactical social and political orientation, and distinctive activities (Deakin, 2001; Keane, 1998). Using the Internet does strengthen these strengths stronger and make potencies more realisable, but never really replace them. Therefore, what matters most in appropriation is actually mapping out the strategic uses.

²⁴ This section is based on the survey and interview with YDA’s Executive Director, Muhammad Riza (30/11/2005). This section also appears in Nugroho (2007b).

South Kalimantan provinces, in a close networking with tens of other local NGOs working in similar issues. In addition to its international networking with international organisations like *Catholic Relief Service* and *Ford Foundation*, YDA is also an active member of *SatuDunia*, a national Indonesian civil society network, part of *OneWorld.Net*²⁵. Together with its networks, YDA is now championing the monitor of the implementation of CERD (Community Empowerment for Rural Development), a nationwide project funded by ADB's loan. For YDA, the abstract globalisation issue has in fact a very real face in rural development, and the face is often frightening and intimidating for ordinary farmers in Indonesia.

At least there are three facts that become YDA's concern. One, recent rural development policies, which are much influenced by global interest, have transformed the country's rural sector into sector of misery where the sector is being sacrificed for urban development and industrialisation through land ownership conversion into industrial purpose, and through losing human resources in the rural sector²⁶.

Two, mainstream farming and agricultural policies based on green-revolution have destroyed a lot of rural area across archipelago that it becomes very difficult, if not impossible, to restore its natural fertility. Three, more farmers are losing their own lands and become mere 'workers' (*petani penggarap*) and earn so little in return to their hard work. These all make farmers and rural inhabitants keep suffering from structural poverty and they have very little space to decide things about their own life²⁷.

The hullabaloo of rural development has become a bitter picture for farmers –the beneficiaries that YDA works for and works with. Unfortunately, apart from realising that they are poor, many of these farmers do not understand the bigger picture and thus they lose hopes in their life. YDA aspires to give this life back to the farmers. In policy level, it is done by advocating their rights; in practical level, it is carried out by widening farmers' perspectives about the complexities of the situation – not to get them lost in the complexities but to let them decide what is best for their own life. To YDA, farmers should be the main actor to determine their own life – they should not and must not be neglected in the rural development policies and practices.

Box 1. YDA and Advokasi

²⁵ *SatuDunia* is a newly established Indonesian node of the global network OneWorld.net (www.oneworld.net), which was established since 1995 and currently has more than 1,600 partners internationally. *SatuDunia* is an initiative of HIVOS, Yayasan Jaring and OneWorld UK and was officially set-up on 16 December 2006. See <http://satudunia.oneworld.net/article/view/144597/> (viewed 20 June 2007).

²⁶ Ample studies on the literature on poverty demonstrate that land tenure or land ownership is a critical factor implicated in poverty incidence. There is also effect of out-migration of productive labour from villages to urban and sub-urban areas in search of work, mainly in industrial sector (Aidit, unknown; Raynolds, 2002; Tjondronegoro, 1984).

²⁷ See YDA's vision and mission stated in their website <http://dutaawam.org/about/>



Yayasan Duta Awam (YDA), set up in Solo, Central Java in 1996, is a NGO working on the issue of farmers advocacy and civil society empowerment. Working with 16 full-timers, YDA aims particularly to empower the farmers so that they can advocate themselves independently in the future, when agricultural and rural development issues are projected to escalate politically in Indonesia. This goal is to be achieved through three main strategic activities: participatory research and monitoring, stakeholder dialogue forums and grassroots media. As a “Farmers’ Institute for Advocacy” YDA has clearly formulated its strategy to empower and increase farmers’ capacity through educations, trainings and mobilisation; advocacy; development of public discourse; database; and capacity building for institutions and organisations. To help running the organisation, YDA has been using the internet since 1998, when Internet was firstly introduced to public in Solo and was probably the first NGO in the area which adopted the Internet.

For YDA, the main reason for using the Internet was very clear: the increasing need for up-to-date information, both for the organisation and mainly for its beneficiaries, namely farmers and rural communities. As a part of the organisation’s strategy, the Internet is introduced to YDA’s staff, networks, and their beneficiaries: local farmers. Not only is the farmer’s bulletin “**Advokasi**” made available online, but despite difficulties, YDA has also endeavoured to pioneer online communities for farmers and its NGO networks. The result of YDA’s engagement with the Internet sometimes goes beyond what can be imagined. It would certainly be simplifying to claim that farmers’ broadened understanding about global political-economy issues surrounding agricultural development and policy is *the* result from YDA’s (and its network’s) use of the Internet. But clearly it is very difficult, if not impossible, for YDA and its networks to keep updated with the latest development in agricultural development policy, including the global issues surrounding it, if they do not adopt the Internet.

To give an example, Tukimin, an ordinary farmer from Kiram Village, Banjar, and a regular reader of *Advokasi*, confidently argued with an Asian Development Bank (ADB)’s project executor when he saw the mismatch between the planning and the actual project undertaking during CERD project. He insisted that there should be participatory approach in the project instead of top-down implementation, because “*This project is being financed by the government’s debt to ADB, and it is us, the people, who will have to pay it back*”, replying against the statement of an ADB’s engineer that the project was possible merely because of ADB’s fund (Advokasi, 2007:12). Using the Internet for dissemination of awareness and broadening perspectives, YDA helps farmers like Tukimin to understand the direct impact of globalisation in their local context. (*)



“After queuing for oil, now, queuing for national poverty”; “Public participatory advocacy in Riau: Advocacy was successful and not anarchic”; “Tip for planting coffee and rice”; “Participatory development in Talang Bunut”; “Is state still there for the poor?”

Source: Farmer’s bulletin **Advokasi**, Edition 21, downloaded from <http://www.dutaawam.org/> (15 May 2007)

It is this spirit that sheds lights in all YDA’s activities, including the use of technologies like the Internet. Although the initiative for using the technology partly came from the foundation’s board, since then, using internet has been part of the organisation’s strategy. YDA throws away the perception that the Internet is the technology only for ‘people of the city’, the haves, or even the *‘techy-literate’* – Internet is also the technology for farmers, for ‘people of the villages’. However, it was the intervention YDA set up two web communities and a mailing list that farmers can join and participate. One community, *agrodev*, is aimed to help Indonesian farmers groups with market access and to promote sustainable livelihood through social networking. The other one, *indosl*, is an Indonesian watchdog network *Pesticide and Transgenic Network*, that focuses its concern on monitoring the use of chemical pesticide and transgenic organisms in the country²⁸. Although these online communities, very possibly the first farmers’ online ones in Indonesia, are formally set up to help YDA to promote important agricultural-related issues to its NGO networks, YDA also encourages farmers to be active users of the Internet, to be aware of the global issues in agriculture and rural development, and engage with international farmers’ networks as the Internet has become more available in some villages through *warnet/telecentres*²⁹. The result of this effort, for YDA, is sometimes beyond expectation (see Tukimin’s experience in Box 1).

YDA itself has reaped the benefit of the Internet use. Its staff have become familiar in using email not only for regular communication with their colleagues and networks, but also for reporting activities; information searching through WWW has become common practice to help with participatory research and advocacy works. YDA has also changed

²⁸ See <http://agrodev.multiply.com> and <http://indosl.multiply.com>, The mailing list is <http://groups.yahoo.com/group/agrodev/>

²⁹ *Telecentre*, or *warnet* (in Indonesian), literally means *internet kiosk*. It is a public internet access points often available in area where internet infrastructure is not well developed (James, 2006). Lim argues that to understand ‘Indonesian Internet’ is to understand *warnet* (Lim, 2002; 2004; 2006).

its website from a show-window-type of web into *blog-styled* website that reflects the organisation's vision of a shared community. But all of these practices are not result of an instant process. Executive's and foundation board's initiatives have played important roles in the early days of the use of the technology. Using email for internal communication, for example, was initially top-down policy, as well as requiring staff participation in the organisation's internal Internet training. But, soon, after being familiar with the Internet and realising the benefits, it gave impetus to the wider use of the technology, even spread the use to other organisations within its network and beneficiaries. Internally, to help staff use the Internet better, YDA created 'social learning', or *pendampingan* (literally means 'companionship') –staff who use the Internet less intensively are accompanied by others who use more intensively. This approach, apparently, does not stop in the organisation level.

Pendampingan [(companionship)] is the best way [to work with our beneficiaries]. Unfortunately, our NGOs colleagues, to our observation, are still minimal in sharing farmers' issues. Only few do it properly. Whereas we know that there are abundant issues related to farmer and rural development out there, in national and global scale ... like genetics engineering or [chemical] pesticide. ... That's why I think we should help these [NGOs] to use the Internet more strategically in long-term perspective, and not just for [organisations'] visibility and social status. Because, in many cases, although they can access email and Internet [WWW] they still come to us, YDA, to ask questions to which the answers can actually be found in the Internet very easily. I wonder why this happens (Muhammad Riza, interview, 30/11/2005)

Apparently, by creating space for social learning, both in organisation and network level, not only that familiarisation with the Internet becomes much easier for the organisations, the networks, but that the benefit of such technological implementation could also be enjoyed relatively more quickly, especially by the beneficiaries they work with: the farmers.

4. Some reflection

There are some attributes that can explain variance in the rates of adoption of technology in organisation (Frambach, 1993; Rogers, 2003; Wejnert, 2002). While *relative advantage* of the Internet (as perceived by Indonesian NGOs) drives the adoption internally, *compatibility* of the technology (in terms of value and capability to fulfil the needs for building better cooperation among NGOs, providing wider perspective, and building and running networks, among others) is the strong external driver. Although *complexity* of the technology has been found to hinder NGOs in their adoption, it is sustained by perception that the benefits gained from using the technology outweigh the complexity it has. Among notable examples is the benefit to be able to counter surveillance in repressive, authoritarian regime (as also observed by Lim, 2002 when looking at the Internet and civic space). *Trialability* and *observability* attributes work in a consistent way: NGOs would need not only to experiment with the technology but also to observe the results and only after being convinced that the technology serves their needs (and within the capacity to afford it), they would fully adopt it.

With the distinction between 'evolutionary' and 'revolutionary' view of technology (as discussed in Freeman and Perez, 1998) taken into account, in the universe of Indonesian NGOs, although the advent of Internet technology is considered to be revolutionary that it fundamentally empowers the role of civil society in social movement as observed by some scholars (e.g. Harney and Olivia, 2003; Hill, 2003; Hill and Sen, 2005; Lim, 2003b), the adoption of it in NGOs seems to follow evolutionary path. As indicated in the study, the substitution effect of the Internet is not fully realised mainly

because of the problems in availability of access. Using the Internet as communication tool does not mean replacing 'older' technologies like telephone or fax; neither does it swap printed bulletin for online newsletter for dissemination of information and managing organisational networks. Maybe it is the general context of Indonesia where unequal access contributes to this situation, but certainly it is the particular situation within civil society movement: using technology for cyberactivism is important (as theorised by McCaughey and Ayers, 2003), but it is only secondary to physical interaction and engagement. This is entirely true, and a major point, In the case of NGO movement in rural sector. Using the Internet for rural empowerment is important, but the real rural reform takes place in the 'off-line' realm: the real engagement with farmers and rural issues and activism. It is within this direction and concern that the adoption and use of the Internet in rural NGOs may be better understood in some following accounts.

First, *adoption of technology is about familiarisation with its features*. Empirical observation with YDA (and with other CSOs³⁰) shows that there are two factors driving the very first step of implementation phase: organisational values and leadership. Organisation's internal values are important in the adoption stage. If its perceived characteristics match with the organisation's value, the familiarisation proceeds much quicker and helps the organisations to find opportunities for better and further implementation and to explore the use, albeit difficulties and problems. This observation resonates with what diffusion theory suggests: innovation compatible with existing values and norms are likely to be adopted quickly (Rogers, 2003:241,318). Such values also impact the 'institutionalisation' of technological use in organisation, i.e. where organisation familiarises itself with the technology by putting it into organisational routines (as defined by Orlikowski, 1992:23-27). Likewise, organisational leadership is found to be equally playing substantial part in the adoption stage. In many Indonesian CSOs (including NGOs), the direction and discretion to adopt the Internet is embodied in leadership decision as part of responses to the socio-political change in the country. Therefore, not only that during the adoption process such opinion leadership counts (as theorised by Rogers, 2003), it is also substantial in facilitating social learning in using the technology (Bandura, 1977; 1986; cited in Rogers, 2003) as substantial part of familiarisation. From the information system strategy perspective (Galliers, 2004; 2007; Levy et al., 1999), the initial stage of implementation is important because it is when organisations simultaneously exploit and explore the adopted technology. It is an essential foundation for organisations to develop their information *systems* strategy, which is ongoing and processual (Galliers, 2004). However, as shown in this study, instead of rational planning, what matters here is the dynamic familiarisation through try-and-error practice. Hence, this lays foundation for a constant ongoing and emergent process of integrating the technology into the organisation.

Second, *adaptation of technology means building configurational capability*. From close observation of Indonesian CSOs like YDA, this study suggests that what characterises the subsequent phase of implementation, namely adaptation, is the organisation's effort to build its capability to configure and reconfigure the technology. It is the stage where, in order to learn to use the Internet strategically, Indonesian CSOs have to build their own capacity and capability to customise the technology, to match it with the organisational structure through applying different settings and configurations for different purposes. This also means combining knowledge of civil society that will determine the direction of the implementation and integration of the Internet in organisations and results in both the organisation and the technology being transformed. This observation reverberates with what Cooper and Zmud (1990) suggest about

³⁰ Due to limited space other observations are not presented in detail here. Please consult Nugroho (2007a)

acceptance and *routinisation* at once, or *redefining/restructuring* as theorised by diffusion research, after which innovation would be rapidly routinised and was unlikely to change further (Rogers, 2003). In empirical level, strategic use of the Internet in civil society means that the technology is realised to have the potentials to be platforms for strategic activities (like campaign, civic engagement, fundraising, coalition building, etc). What matters in the implementation phase, then, is whether or not these potentials can be realised and thus become advantage for strategic uses. In order to do so, groups and organisations within civil society, including NGOs, have to build their capacity and ability to arrange their use of the Internet by modifying its settings and configurations, including hardware and software, and at the same time, also modifying organisation's routines like working arrangements, internal policies, etc. This is what this study defines as 'building configurational capability'. There are four aspects of configurational capabilities observed when these organisations implement the Internet: (i) *cognitive* (configuring distributed knowledge of different kinds), (ii) *organisational* (configuring distributed actors and other repositories of knowledge and know-how), (iii) *design* (configuring functional features and solutions), and (iv) *affective* (configuring motivation, shared value, issues and concerns)³¹. As observed here, central to the adaptation stage is how Indonesian CSOs like YDA build their capabilities in strategically using the Internet by configuring and reconfiguring both technological and organisational properties. As also noted during the study, the development of these capabilities (and their aspects) depends on the provision of continuous learning in the organisations. This stage is substantial for change management issues in information system strategy (Galliers, 2004; 2007), for it addresses not only strategies (and strategising) but also unanticipated consequences of the strategic implementation –or, appropriation.

Third, *appropriation starts from mapping out strategic uses*. For Indonesian CSOs, including rural NGOs aiming for rural sector reform, the essence of implementing the Internet in organisation is 'strategic use'. It is more than just applying technology for a particular purpose, but more importantly it is about using technology in a strategic and political way to support the strategic and political work of civil society (Surman and Reilly, 2003; Warkentin, 2001). However, it should be noted, that the strategic realm of civil society movements actually stems from 'traditional strengths' of civil society sector, like pertinent issues and concerns, tactical social and political orientation, and distinctive activities (Deakin, 2001; Keane, 1998). Using the Internet does strengthen these strengths stronger and make potencies more realisable, but never really replace them. Therefore, what matters most in the last stage of implementation phase –appropriation– is actually mapping out the strategic uses.

The data and the case presented here suggest that rural NGOs have potential –and can indeed realise such potentials– to use the Internet strategically and politically in promoting rural sector reform. One particular strategic use revolves around the idea of *networking the movement*. While networking with global civil society is undoubtedly important today, in order to take rural sector reform onboard, networking with local and national organisations have never been this substantial. Why? Social movement is all about network: of ideas, of awareness, of organisations, and of activisms (Diani, 2003; McAdam, 2003). It is thus important, in NGOs' perspective, to channel the grand policies of rural development (as may have been reinvigorated by the government) into local concerns and to widen direct involvement of organisations and their beneficiaries

³¹ The first three aspects was also observed by scholars who also found similar capabilities when researching low-tech companies in PILOT project (Bender, 2005; 2006; Bender and Laestadius, 2005; Hirsch-Kreinsen et al., 2005). The affective aspect, which may have escaped their attention because of the nature of the organisations being studied, appears very strongly in this study. These aspects together build the organisation's configurational capabilities.

towards the implementation of such policies. In this sense, networking is important not only to help expand and animate the networks themselves, but also to facilitate the understanding about the complex nature of rural development issues in the local context. Fuelled by the use of technological artefacts like the Internet, network of social movement in an instance like Indonesia is no longer just an instrument for civil society to mobilise resources and action: it has become a locus of power in society, a powerful fabric of social change. The Internet itself, working as driver of these networks, as a direct consequence, should be viewed as more than just communication tools.

Another particular strategic use of the Internet in rural NGOs is *empowerment of beneficiaries*. The case of YDA shows that through Internet use, NGOs can really empower their beneficiaries by broadening their perspectives towards various global issues that resonates to their local context. Just like most Indonesian NGOs which apparently have no luxury to afford an IT specialist to help them using the technology, YDA chose social learning as strategy for Internet implementation because it suits well the way NGOs work. The case further suggests that organisation could actually exploit and explore the technology more effectively to improve operational management and provide strategic management information to achieve their missions and goals. But more importantly, the use of technologies like the Internet can be used by NGOs to help their beneficiaries widen their perspectives about global issues which affect the very context of their work: rural development. This is of paramount important because a lot of problematic rural development issues at macro level need to be disentangled, and one way to do so is to articulate the issues in local circumstance and to understand the implication in actual context (Kwa, 2004; Raynolds, 2000).

There is one critical note to these strategic uses, however: the Internet and its use in Indonesian NGOs cannot be seen as homogenous. While large parts of the population neither have equal access nor similar capabilities to use the Internet, NGOs still need to “translate” and “interpret” unadapted content of the Net. Not only that it is true for technicalities like language, but substantially, a lot of the content that the Internet brings, especially the global issues, needs to be rearticulated and understood within the local contexts. Only if such problems can be properly tackled, the use of the Internet can significantly impact Indonesian NGOs’ relationship with their national and international partners and to empower their beneficiaries.

5. Conclusion

Rural sector reform has been claimed to have been a major agenda of Indonesia’s reformasi, both by the government agencies and by non-government institutions. However, NGOs have always been very critical to various policies in rural development imposed by the government, mainly because NGOs view –from past experiences and future projections—that these policies are not in favour of farmers and rural communities in the long term. While for the government rural reform generally means ‘development’, for NGOs this implies ‘empowerment’. Consequently, while rural communities are seen as ‘object of development’ by the government (as in the notion of ‘food security’), they are ‘subject’ in the eyes of NGOs (as in ‘food sovereignty’). The implication of this is very fundamental: rural sector reform is not only about building rural communities through agricultural and rural development in the grand political economy scenario as largely envisaged by the government. Rather, it is about reclaiming farmers’ and rural communities’ social, political and economic rights to determine their own life; it concerns about elevating life standard in rural areas; it involves protection of rural environment; and it invokes rural sector sustainability –objectives which are commonly shared among Indonesian NGOs, particularly who work in rural sector.

This account is important when examining how rural NGOs use the Internet to help them taking rural sector reform onboard their activism, because both their adoption of the technology and their response towards the issue cannot be taken for granted.

Firstly, evident here suggests that not only the Internet use impacts NGO's performance in terms of internal management, but more importantly, that such a use has contributed in the widening of organisational perspectives, expansion of organisational networks and thus increase of organisational influences in the society, including in the furtherance of rural sector reform. In fact, this technological use, to some extent, can also be seen to be part of the strategy of Indonesian rural NGOs to build critical views towards policies and practices of rural development through their engagement with various civic groups, including the farmers. This suggests strongly that in their search to actively participate in social transformation, the Internet has become a 'convivial' tool for Indonesian NGOs to achieve their goals, including those working in rural sector. Borrowing the conception of Ivan Illich's conviviality, this is the level of technological use where human are not any longer subordinated by technology, but instead have control over it and use it for their own purpose (Illich, 1973).

Secondly, however, with the escalating need of the NGOs to actively take part in the social transformation in the country which includes reform in rural sector development, they have to change their role in the cyber-world from passive users (recipient) into active participants. Although this is all possible because of the very nature of the Internet that it is not only source of information but a sphere to exist and to act in it and thus 'cyberspace' –a 'spatial' dimension in which life exists (Graham, 1999)—for rural NGOs, such an appropriation is not always the first priority. It is not because that NGOs do not understand the importance of technology, but because technological use is secondary, or less compelling, to the real engagement with rural communities.

Thirdly, nevertheless, working at large in local contexts, while maintaining global network, has made Indonesian rural NGOs, to some extent, able to spot increasing disillusionment about rural sector reform, especially when more global perspective is taken into account (e.g. Kwa, 2004; Reynolds, 2000). But being critical and being able to address adequate criticism towards rural sector development (as imposed by the government in favour of more global control) is not always easy for many Indonesian rural NGOs. This is why national networking among Indonesian NGOs, in addition to the global ones with global NGOs, remains important.

Lastly, there are some strategic areas in NGOs activism where the Internet can be, and have been, used strategically and politically to advance NGOs' involvement in rural sector reform. However, there is a real need for a further thinking and reflection focusing on what can actually be done with the strategic implementation of the Internet within organisations working in rural issues generally.

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Appendix 1

Analysing adopter category using MIMIC-LCA

The multiple indicators multiple causes (MIMIC) latent class analysis (LCA) model is a classification method when researchers cannot find a “gold standard” to classify participants. The MIMIC-LCA model includes features of a typical LCA model and introduces a new relation between the latent class and covariates (MacCutcheon, 1987; Magidson and Vermunt, 2002; Vermunt and Magidson, 2002).

In this case, the covariates are: length of the Internet use (*intsinc*), PC use (*pcsinc*), IT expenditure as percentage of annual turnover (*itexpproc*), and IT expenditure in nominal (*itexpnom*); while variables being estimated are the demographical data: age of organisation (*est*), no of staff (*staff*), and annual turn over (*ato*). The task is to find out the patterns of internet adoption and their stratification based on demography variables, given that there are many items and multiple stratification factors. The criteria for choosing among various models is based on the goodness of fit, with the lowest BIC (Model 1) is preferred (Magidson and Vermunt, 2002; Vermunt and Magidson, 2002).

The goodness of fit of the MIMIC model

| Model | LL | BIC(LL) | Npar | L ² | Df | p-value | Class. Err. |
|---------|----------|-----------|------|----------------|-----|-----------|-------------|
| 2 class | -795.019 | 1816.7598 | 42 | 1096.2965 | 179 | 1.50e-131 | 0.0395 |
| 3 class | -736.693 | 1851.2579 | 70 | 979.6461 | 151 | 2.00e-121 | 0.0568 |
| 4 class | -696.628 | 1922.275 | 98 | 899.5146 | 123 | 2.70e-118 | 0.0413 |

The profile of indicators

| | Class1 | Class2 | | Class1 | Class2 |
|-------------------|--------|--------|-------------------|--------|--------|
| Class size | 0.7556 | 0.2444 | Class size | 0.7556 | 0.2444 |
| Indicators | | | Covariates | | |
| est | | | pcsinc | | |
| 0-1yr | 0.0431 | 0.0003 | 3-5 yr | 0.3025 | 0.0451 |
| 1-2 yr | 0.0493 | 0.0004 | 5-10 yr | 0.3644 | 0.2431 |
| 10+ yr | 0.2038 | 0.8581 | <3 yr | 0.1555 | 0 |
| 2-5 yr | 0.2711 | 0.0023 | >10 yr | 0.0774 | 0.6885 |
| 5-8 yr | 0.299 | 0.0717 | | 0.1002 | 0.0233 |
| 8-10 yr | 0.1336 | 0.0672 | intsinc | | |
| staff | | | 3-5 yr | 0.3309 | 0.0871 |
| 11-15 | 0.1478 | 0.0343 | 5-10 yr | 0.2104 | 0.5356 |
| 16-20 | 0.0461 | 0.1303 | <3 yr | 0.2562 | 0.0218 |
| 21-25 | 0.0001 | 0.0575 | >10 yr | 0.0049 | 0.2633 |
| 6-10 | 0.3259 | 0.2658 | | 0.1976 | 0.0922 |
| <5 | 0.4798 | 0.0891 | itexpproc | | |
| >25 | 0.0003 | 0.4229 | 25-50% | 0.1428 | 0.2995 |
| ato | | | 50-75% | 0.0239 | 0.0186 |
| 1-2b | 0.079 | 0.2935 | <25% | 0.6949 | 0.4798 |
| 100-500m | 0.3541 | 0.1738 | >75% | 0.006 | 0 |
| 500m-1b | 0.1556 | 0.1838 | | 0.1323 | 0.2021 |
| <100m | 0.3809 | 0.0043 | itexpnom | | |
| >2b | 0.0303 | 0.3446 | 100-500m | 0.018 | 0.1112 |
| | | | 50-100m | 0.0536 | 0.2608 |
| | | | 500m-1b | 0.0179 | 0 |
| | | | <50m | 0.741 | 0.3926 |
| | | | >1b | 0 | 0.0186 |
| | | | | 0.1695 | 0.2168 |

Appendix 2

Analysing Indonesian NGO's issues and concerns and adoption pattern using MIMIC-LCA

Using exactly the same method as explained in Appendix 1, in this case, the covariates remain: length of the Internet use (*intsinc*), PC use (*pcsinc*), IT expenditure as percentage of annual turnover (*itexpproc*), and IT expenditure in nominal (*itexpnom*); while variables being estimated are the issues and concerns data: *ic_env* (environment), *ic_glob* (globalisation), *ic_rural* (rural), *ic_urban* (urban), *ic_devp* (development), *ic_hrights* (human rights), *ic_justpec* (justice and peace), *ic_democ* (democratisation), *ic_gender* (gender), *ic_child* (children and youth), *ic_poverty* (poverty alleviation), *ic_educ* (education), *ic_disabl* (disable), *ic_labour* (labour and trade union), *ic_farmer* (farmer), *ic_prof* (professional worker), *ic_gov* (governance), *ic_csemp* (civil society empowerment), *ic_confres* (conflict resolution), *ic_plural* (pluralism), *ic_idigns* (indigenous rights), *ic_ecosoc* (economic, cultural and social rights), *ic_oth* (other issues). The results from multiple indicators multiple causes (MIMIC) latent class analysis (LCA) models and the profile are presented below.

The goodness of fit of the MIMIC model

| Model | LL | BIC(LL) | Npar | L ² | Df | p-value | Class. Err. |
|---------|----------|-----------|------|----------------|-----|----------|-------------|
| 2 class | -2553.67 | 5420.4256 | 58 | 4421.7976 | 163 | 1.8e-811 | 0.0153 |
| 3 class | -2450.18 | 5407.792 | 94 | 4214.8303 | 127 | 1.3e-794 | 0.0258 |
| 4 class | -2363.57 | 5428.8913 | 130 | 4041.5957 | 91 | 1.7e-786 | 0.0384 |

The profile of indicators

| | Class 1 | Class 2 | Class 3 | | Class 1 | Class 2 | Class 3 |
|-------------------|---------|---------|---------|-------------------|---------|---------|---------|
| Class Size | 0.6674 | 0.1973 | 0.1354 | Class Size | 0.6674 | 0.1973 | 0.1354 |
| Indicators | | | | Indicators | | | |
| ic_env | | | | ic_educ | | | |
| 0 | 0.5716 | 0.4027 | 0.0051 | 0 | 0.5788 | 0.559 | 0.0427 |
| 1 | 0.4284 | 0.5973 | 0.9949 | 1 | 0.4212 | 0.441 | 0.9573 |
| Mean | 0.4284 | 0.5973 | 0.9949 | Mean | 0.4212 | 0.441 | 0.9573 |
| ic_glob | | | | ic_disabl | | | |
| 0 | 0.8782 | 0.4172 | 0.2107 | 0 | 0.9661 | 0.9995 | 0.6334 |
| 1 | 0.1218 | 0.5828 | 0.7893 | 1 | 0.0339 | 0.0005 | 0.3666 |
| Mean | 0.1218 | 0.5828 | 0.7893 | Mean | 0.0339 | 0.0005 | 0.3666 |
| ic_rural | | | | ic_labour | | | |
| 0 | 0.7605 | 0.6886 | 0.1612 | 0 | 0.8936 | 0.5822 | 0.4291 |
| 1 | 0.2395 | 0.3114 | 0.8388 | 1 | 0.1064 | 0.4178 | 0.5709 |
| Mean | 0.2395 | 0.3114 | 0.8388 | Mean | 0.1064 | 0.4178 | 0.5709 |
| ic_urban | | | | ic_farmer | | | |
| 0 | 0.905 | 0.7422 | 0.2401 | 0 | 0.6726 | 0.6555 | 0.0413 |
| 1 | 0.095 | 0.2578 | 0.7599 | 1 | 0.3274 | 0.3445 | 0.9587 |
| Mean | 0.095 | 0.2578 | 0.7599 | Mean | 0.3274 | 0.3445 | 0.9587 |
| ic_devp | | | | ic_prof | | | |
| 0 | 0.5659 | 0.6272 | 0.0066 | 0 | 0.959 | 0.9764 | 0.5684 |
| 1 | 0.4341 | 0.3728 | 0.9934 | 1 | 0.041 | 0.0236 | 0.4316 |
| Mean | 0.4341 | 0.3728 | 0.9934 | Mean | 0.041 | 0.0236 | 0.4316 |
| ic_hrighs | | | | ic_gov | | | |
| 0 | 0.7764 | 0.0299 | 0.0399 | 0 | 0.8184 | 0.5605 | 0.4299 |
| 1 | 0.2236 | 0.9701 | 0.9601 | 1 | 0.1816 | 0.4395 | 0.5701 |
| Mean | 0.2236 | 0.9701 | 0.9601 | Mean | 0.1816 | 0.4395 | 0.5701 |
| ic_justpec | | | | ic_csemp | | | |
| 0 | 0.8419 | 0.2439 | 0.074 | 0 | 0.5163 | 0.2241 | 0.1035 |
| 1 | 0.1581 | 0.7561 | 0.926 | 1 | 0.4837 | 0.7759 | 0.8965 |
| Mean | 0.1581 | 0.7561 | 0.926 | Mean | 0.4837 | 0.7759 | 0.8965 |
| ic_democ | | | | ic_confres | | | |
| 0 | 0.782 | 0.1033 | 0.1059 | 0 | 0.8924 | 0.6059 | 0.2333 |
| 1 | 0.218 | 0.8967 | 0.8941 | 1 | 0.1076 | 0.3941 | 0.7667 |
| Mean | 0.218 | 0.8967 | 0.8941 | Mean | 0.1076 | 0.3941 | 0.7667 |
| ic_gender | | | | ic_plural | | | |
| 0 | 0.711 | 0.2742 | 0.0735 | 0 | 0.9312 | 0.7507 | 0.1986 |
| 1 | 0.289 | 0.7258 | 0.9265 | 1 | 0.0688 | 0.2493 | 0.8014 |
| Mean | 0.289 | 0.7258 | 0.9265 | Mean | 0.0688 | 0.2493 | 0.8014 |
| ic_child | | | | ic_idigns | | | |
| 0 | 0.7512 | 0.5723 | 0.1091 | 0 | 0.9032 | 0.7488 | 0.3728 |
| 1 | 0.2488 | 0.4277 | 0.8909 | 1 | 0.0968 | 0.2512 | 0.6272 |
| Mean | 0.2488 | 0.4277 | 0.8909 | Mean | 0.0968 | 0.2512 | 0.6272 |
| ic_poverty | | | | ic_ecosoc | | | |
| 0 | 0.6424 | 0.2548 | 0.0053 | 0 | 0.7567 | 0.1437 | 0.0716 |
| 1 | 0.3576 | 0.7452 | 0.9947 | 1 | 0.2433 | 0.8563 | 0.9284 |
| Mean | 0.3576 | 0.7452 | 0.9947 | Mean | 0.2433 | 0.8563 | 0.9284 |

| | Class 1 | Class 2 | Class 3 |
|-------------------|---------|---------|---------|
| Class Size | 0.6674 | 0.1973 | 0.1354 |
| Covariates | | | |
| pcsinc | | | |
| 3-5 yr | 0.2305 | 0.3224 | 0.1653 |
| 5-10 yr | 0.3106 | 0.4337 | 0.3107 |
| <3 yr | 0.148 | 0.0267 | 0.0996 |
| >10 yr | 0.2255 | 0.1622 | 0.3233 |
| | 0.0853 | 0.0549 | 0.101 |
| intsinc | | | |
| 3-5 yr | 0.2298 | 0.3716 | 0.3324 |
| 5-10 yr | 0.2875 | 0.3399 | 0.2267 |
| <3 yr | 0.2261 | 0.1974 | 0.0674 |
| >10 yr | 0.0679 | 0.022 | 0.1346 |
| | 0.1887 | 0.0691 | 0.2389 |
| itexpproc | | | |
| 25-50% | 0.1685 | 0.2757 | 0.1047 |
| 50-75% | 0.0135 | 0.023 | 0.0673 |
| <25% | 0.6418 | 0.701 | 0.5607 |
| >75% | 0.0068 | 0 | 0 |
| | 0.1694 | 0.0003 | 0.2673 |
| itexpnom | | | |
| 100-500m | 0.0262 | 0.0716 | 0.068 |
| 50-100m | 0.1121 | 0.1033 | 0.065 |
| 500m-1b | 0.0068 | 0.046 | 0 |
| <50m | 0.6645 | 0.6891 | 0.566 |
| >1b | 0.0068 | 0 | 0 |
| | 0.1836 | 0.0899 | 0.301 |

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The Brooks World Poverty Institute (BWPI) creates and shares knowledge to help end global poverty.

BWPI is multidisciplinary, researching poverty in both the rich and poor worlds.

Our aim is to better understand why people are poor, what keeps them trapped in poverty and how they can be helped - drawing upon the very best international practice in research and policy making.

The Brooks World Poverty Institute is chaired by Nobel Laureate, Professor Joseph E. Stiglitz.

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