TAKING "ANAK EMAS" SYSTEM (MyAnakEmas) TO THE CLOUD

Abdul Rahman bin Ahmad Dahlan

Department of Information Systems
Kulliyyah of Information and Communication Technology
International Islamic University Malaysia
Selangor, Malaysia
E-mail: arad@iium.edu.my

Shairazi bin Sauki, Khairul Idham bin Rusmadi, Muhamad Hafizi bin Shuib, Mohd Mumtaz bin Man Sort,
Mohd. Toriq Khan bin Mohamad Niyaz Khan
Department of Information Systems
Kulliyyah of Information and Communication Technology
International Islamic University Malaysia
Selangor, Malaysia

ABSTRACT

This conceptual paper seeks to put forth a novel vision, namely the combined deployment of Quadruple Helix Model (QHM) collaboration mooted by Agensi Inovasi Malaysia, "whole-of-government" concept of ICT implementation across the Malaysian government agencies mooted by MAMPU, and the advances in cloud computing that can be used to set up what is known as of "Anak Emas" System or MyAnakEmas. The QHM actors, namely the Government, Academia, Industry and Citizen need to collaborate and share resources in nurturing and addressing the needs of less privileged and less fortunate children including orphans holistically, rather than the current practice executed in silos, isolation or independently. This proposed collaborative inter-organizational MyAnakEmas is to enable a consolidated approach for government agencies, NGOs, private sector and individuals in building up a single and trusted national database on "Anak Emas" or orphanage children. This database, owned and managed by a government agency such as Jabatan Kebajikan Masyarakat, can be used and updated by all other authorized and relevant organizations and individuals in making a consolidated contribution in nurturing and developing these orphanage children to be independent and developing entrepreneurship culture from an early age. Thus, eliminating duplication in data, efforts and investments made by various organizations. At the same time, enhancing timely decision-making based on quality, single and trusted view on "Anak Emas".

KEYWORDS

Quadruple Helix Model Collaboration; Innovation; Inter-organizational Information Systems; Orphanage; Change Management; Cloud Computing

1. INTRODUCTION

According to the Muslim Global Relief [1], orphans and vulnerable children are unfortunate enough to have been deprived of their first line of protection – either one or both of their parents. Nowadays, the issues of orphans are increasingly worrying. There are a lot of children that become orphan day by day. It is estimated there are between 143 million and 210 million orphans worldwide. Every day 5,760 more children become orphans. 2,102,400 more children become orphans every year in Africa alone [2]. These orphans who mainly being sheltered and taken care by the local orphanage homes are being raised without experiencing love from family and basic knowledge about how to live a life in a family [3]. Given that orphans will only be at the orphanage category until 18 years old, a holistic national coordinated program is needed to help the orphans to get better chance at being adopted by foster parents before they reached 18 years old. The program will encourage foster parents and families to adopt orphanage children or "Anak Emas". By adopting a child, foster parents will be receiving a number of benefits for themselves and the children themselves [4]. The national and concerted

program, involving government agencies, NGOs, individuals and private companies, is not just to give direct financial help or social benefits but act as a platform for the foster families and the children to enhance their quality of life.

2. BACKGROUND

The idea of this collaborative MyAnakEmas comes from the Orphanage House in Kota Bharu, Kelantan. From our observation, these orphans face a common problem – depression. According to MediLexicon's Medical Dictionary [5], depression is "*a mental state or chronic mental disorder characterized by feelings of sadness, loneliness, despair, low self-esteem, and self-reproach; accompanying signs include psychomotor retardation (or less frequently agitation), withdrawal from social contact, and vegetative states such as loss of appetite and insomnia*". Based on this research, it is found that depression happened when orphans do not get enough attention. Statistic has shown that depression will cause negative implications such as suicide, sadness and etc [6]. Therefore, a holistic system lead by government is deemed necessary to prevent this negative situations from happening in future, where relevant government agencies at the federal, states and districts levels collaborate and share resources by adopting the blueprint stated in "The Malaysian Public Sector ICT Strategic Plan 2011-2015" [7] and Innovating Malaysia [8]. Collaboration and resource sharing among various types of communities, facilitated by Information System (IS) and Information and Communication Technologies (ICT), can lead to increased social and economic development opportunities [9].

According to Datuk Seri Radzi Tan Sri Sheikh Ahmad, the man who founded the Skim Keluarga Angkat of the Yayasan Pelajaran Mara (YPM) in [10], the organization appreciates donors of the scheme where YPM calls their donators as 'a part of the YPM family'. YPM accepts three methods for receiving donations from the public. First, by cash or cheque, second, by online, and finally through the post office (post money).

Based on the review made on a website (http://www.rumahanakyatim.com), a list of orphanage houses and families that want to adopt orphans are provided [11]. This provides a platform for those who really want to donate, but do not know where to donate to. Besides that, the safety and security of adopted orphanage children need to be guaranteed because sometimes the location of orphanage is not suitable and may be exposed to dangerous situation. For example, on the case of a fatal landslide at the Children's Hidayat Madrasah Al-Taqwa Orphanage, Hulu Langat 16 people killed [12] mostly children.

In light of this incident, the adoption of Helix Quadruple Model collaboration, "whole-of-government" concept of ICT implementation across the Malaysian government agencies together with the advancement of technology should give positive hopes for many people, ways of doing good deeds, opportunities for participating in events that help social improvements and not forgetting for making contributions easier. With this at stake, the ICT/Internet is the most crucial component in making these hopes as a reality. According to Hj. Mohd. Termizi Bin Ismail, the Chairman of Al-Munirah Orphanage and Shelter House for the Needy (PKAYAM), everyone should have a sense of awareness for the needs of the needy. They should always be reminded how important it is to contribute part of their earnings to the needy [13].

On other hand, review on the Ikholwa shelter house located in South Africa [14], they have a portal that connects to the outside world via Internet. This portal enables them to get donations and telling the others that there are those who are in need in S. Africa. Based on another review on the website of keepachildalive.org, they utilize a rather interesting method in getting donation, where they use popular artists like Alicia Keys to collect donation.

3. PROBLEM STATEMENT

Poor information quality for timely decision-making has been blamed for various problems such as 9/11 terrorists attack [15] and the 2004 Asia tsunami [16]. Additionally, many decision-makers and information managers also suffer from a lack of information availability awareness and that the information flows are heavily regulated by the institutional structure and organizations involved in national and multi-agency issues such as social problems, security issues, and disaster management, which may not achieve the full potential of the available ICTs' technical capabilities [17]. While inter-agency information sharing and coordination have been identified as a point of major failure since the 9/11 attacks in 2001 [18], the US government's response to hurricane Katrina in 2005 revealed that the US e-Government initiatives for emergency management agency's still need to improve their inter-agencies information sharing and coordination mechanisms [19]. Lack of commitment on behalf of government officials has been identified as a hurdle in developing policy that enables communities' resilience [20] as well as a better and improved life for the citizens [8].

For an example on poor information quality, the UN-ISDR (United Nations International Strategy for Disaster Reduction) [21] states that there are many countries in which a wealth of disaster risk information exists in archived form. Such information might be inaccessible for restricted institutional or technical reasons: data is restricted for presumed security purposes or as an institutional power base; inadequate cross-organization communication about the existence of data; dissemination of information is not considered a priority by the organization; information is maintained in specialist, non-standard or outdated formats; existing information is costly to convert into more readily accessible formats; and data compilers have not consulted users about their data requirements. Likewise, most orphanage homes in Malaysia are providing limited services such as providing shelter to the orphans only. According to Jamaludin Ramli Aziz [6] on the *Kemurungan Dalam Kalangan Penghuni Rumah Anak Yatim Di Daerah Kota*

Bharu, Kelantan: the orphans do not get enough attention, thus, causing them to experience depression. A more comprehensive and holistic approach involving Quadruple Helix Model collaboration in nurturing, educating and talent development services is required.

Apart from the lack of information access, the other reasons for poor information quality that impede timely decision-making include the followings [21]:

A. Island of Information and Database

The need of individual organizations to have adequate information for their own programme interests has motivated most development agencies to work from their own information systems that cannot be applied easily to other settings. As a result, information related to subjects of interest either can be scattered or duplicated, often appearing to be inconsistent or incompatible. Too often, the systematic coverage of data, its reliability, timeliness or general quality relating to the dynamic nature of risks is problematic or poor.

B. Sensitivity of Information

Poor information quality can be further compounded by the perceived sensitivity of data about infrastructure or potential threats to a society by security services or various other governmental responsibilities. It is such features, rather than inherent limitations of modern communication technologies, that are often seen to impede easier or more effective access to crucial information.

C. No Focal Point

While many organizations are involved in similar subjects and activities, no universally-acknowledged focal point exists to provide easy or consistent access to the great variety of pertinent information. As a consequence, important data is scattered around the globe, or valuable experiences are confined within

individual institutions, with no common point of access.

D. Unavailability of Data

One of the major constraints in the more effective use of information is the unavailability of data. Many areas are without basic data or have not maintained consistent databases over time. Even on an individual basis, precise information often is difficult to obtain as much of the existing data is either generalized or does not reflect a comprehensive picture of the situation at hand.

E. Single-view Point

There is a growing need for subjects of interest such as disaster events and orphanage children to be viewed from a single-view point. This requires more attention to be given to improving the geographical and temporal coverage of publicly available databases and information. While increasing attention may be given to linking database information, there are few examples that are truly integrated, or which encourage multi-variant analysis or comparison.

F. Inconsistent Coverage of Information

Crucial limitations in the collection and use of data remain in several fundamental areas. There is a widespread lack of consistent coverage of relevant data in both time and space, with data gaps most pervasive in the poorest countries. Data quality is adversely affected by a lack of methodologies or standard protocols pertaining to data gathering, compilation, storage, analysis and dissemination. Consequently, valid comparisons or cross-referenced analysis are difficult or not even attempted.

G. Incomplete, Spotty or Inadequate Data.

Incomplete, spotty or inadequate data also invites a misinterpretation of information including on orphanage children. At times this may even be intentional or biased for ulterior motives, such as to demonstrate a certain political viewpoint.

To address the problem of poor information quality for timely decision-making, inter-agency information sharing arrangements as well as effective deployment of ICT and information systems (IS) have been identified [21].

4. PROPOSED SOLUTION

This conceptual paper proposes an information system (IS)-based solution called MyAnakEmas that has the following major components:

A. Actors and Collaborators

The adoption of Open Innovation through the Quadruple Helix Model (QHM) collaborations is required [8]. QHM's premise is that all four (4) actors, namely Government, Academia, Industry and Citizen, have important roles in stimulating creative methods and approaches in nurturing and developing these less privileged "Anak Emas" children and communities. When all four actors work in synchronicity, the multiplier factor of innovation in creating independent and enterprising "Anak Emas" or orphanage children necessary to drive a better life kicks in. In the initial stage, several government agencies, departments and NGOs in Selangor are the proposed stakeholders for developing and as "Proof-of-Concept" implementation of MyAnakEmas. These organizations in Selangor are to collaborate and cooperate together in ensuring that MyAnakEmas will work successfully, with the desired end result of a better and improved life for these "Anak Emas" or orphanage children. The actors and collaborators may include:

(a) Jabatan Kebajikan Masyarakat – taking the leadership role and provides a single and trusted data/information on the orphans, participants and stakeholders of the program.
(b) Lembaga Zakat Selangor - managing timely and effective distribution of Zakat.
(c) Kementerian Sumber Manusia (Ministry of Human Resource), Jabatan Perkhidmatan

Awam, Kementerian Kemajuan Luar Bandar dan Wilayah, MARA - provides training, entrepreneurship and business programs as well as jobs opportunities,

(d) 1 Malaysia Hospital – provides healthcare and medical services.

(e) Bank Islam - Official bank for the loan programs and other financial assistance for this program.

(f) Local Orphanage of Selangor – provides updates, feedbacks and involves directly in the day-to-day running of the program.

B. Technology

Database Management System (DBMS) such as Oracle, MS SQL Server and IBM DB2 can be used to store and manage data centrally of the orphans, foster families and financial transactions. The used of DBMS, Data Warehousing and Business Intelligence can increase the efficiency and effectiveness of "Anak Emas" data management compared to using standalone IT systems or manual filing systems that are still widely used by most of the orphanage operators in this country. Based on Oracle Concepts [22]: The Instance and the Database: the use of Oracle as the medium of handling databases is the best way in managing big and distributed databases throughout a country or world-wide. Thus, under the conditions of "data and information explosion", MyAnakEmas must have ready access to precise and relevant information from all actors and collaborators' sources for right-now decision making and right-timed. And information are delivered timely through a variety of channels – from reports and dashboards to mobile devices containing the relevant metrics activated by business rules that are "Anak Emas" children centric.

Cloud computing and "Software-as-a-Service" (SaaS) approach using government agencies ICT and IS can be adopted – where a single and trusted MyAnakEmas software and database can be shared and leverage by all relevant and authorized government agencies, NGOs and individuals. According to Jonathan Strickland [23], cloud computing is the new way to manage and share distributed data/information that can improve MyAnakEmas in terms of storage sharing, speed, security and cost. There are, essentially, three distinct types of cloud computing defined in Foley [24], Hodgson [25], Hoover and Martin [26] and Kim [27] as:

(i) Infrastructure-as-a-Service (IaaS) where the cloud provider provides its customers with computing, network and storage resources. Amazon Web Services is an example of this category where Amazon provides its customers computing resources through its Elastic Compute Cloud service and storage service through both Simple Storage Service and Elastic Book Store. (ii) Platform as a Service (PaaS) where the development platforms for which the development tool itself is hosted in the cloud and accessed through a browser. With PaaS, developers can build web applications without installing any tools on their computer and then deploy those applications without any specialized systems administration skills. Google AppEngine and Microsoft Azure are good examples of this category. (iii) Software as a Service (SaaS). With SaaS a provider licenses an application to customers as a service on demand, through a subscription, in a "pay-as-you-go" model. Thus, allow customers to use expensive software as much as their application require and no need to pay ahead much money or even hire more operators to install and maintain that software.

As shown in Figure 1, MyAnakEmas conceptual model is adapted on the cloud computing defined above, involves all four QHM collaborators working in synchronicity. This collaborative model, spear-headed by Jabatan Kebajikan Masyarakat, is generally described as a delivery model for shared databases, computing resources, software, information and knowledge over a network for the citizens, NGOs, private sector and other government agencies to access, use and update. With this proposed model, MyAnakEmas has the potential to: (a) enhance government service delivery through the streamlining of government ICT architecture; (b) optimize and

enhance ICT operations through government, NGOs, industry and academia ICT infrastructure consolidation – wide area network, databases, applications and servers farms; and (c) intensify inter-organizational and inter-agency collaboration towards fostering "whole-of-government" public services [7] in helping the less fortunate individuals and communities of "Anak Emas" children.

Figure 1. Overview of MyAnakEmas that provides a single and trusted-view on "Anak Emas" or orphanage children

C. Change Management

To support and participate in transformational projects such as MyAnakEmas, the actors and collaborators mentioned in sub-section 4A above as well as end-users need to be managed through Change Management programs. According to "The Malaysian Public Sector ICT Strategic Plan 2011–2015" [7], Change Management provides the method and approach in addressing change in the business processes caused by the pervasive use of ICT in delivery services to the "Anak Emas" or orphanage children. Change within and across government agencies, NGOs, companies and individuals can affect different things in different ways. Leavitt's model suggests that changes in technology, people, task, or organizational structure may influence the other

areas [28]. Implementing MyAnakEmas can impact the people within and across organizations as well as the tasks the individual's perform and the organizations' structure. Blended with Change Management program, the end result of implementing MyAnakEmas is a better and improved future life for the citizens of Malaysia – especially the "Anak Emas" or orphanage children.
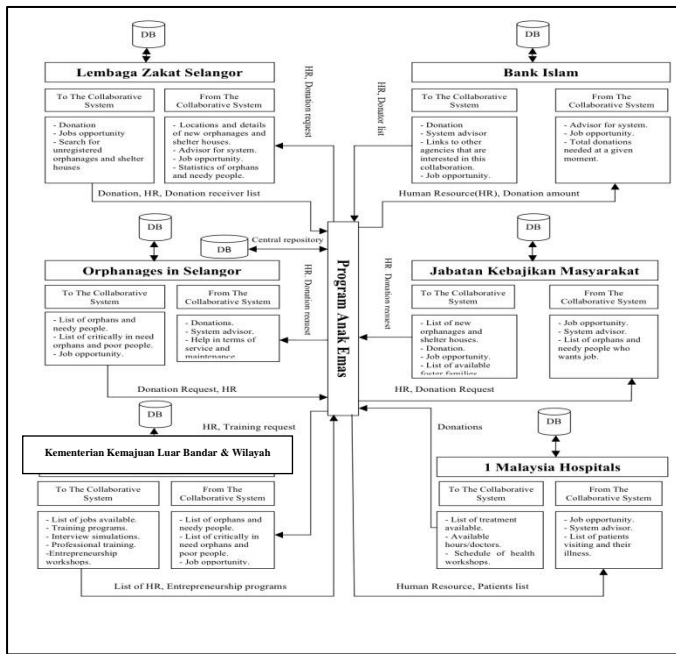
5. WHERE TO FROM HERE?

It is hoped that this conceptual paper motivates the actors of the Quadruple Helix Model collaboration e.g. Jabatan Kebajikan Masyarakat (JKM), to start working towards shared goals and integrated IS-based solution in meeting the needs of "Anak Emas". The development and implementation of MyAnakEmas demands for:

(a) the streamlining of government agencies' Information System (IS) architecture, where efforts are driven to simplify systems, remove duplication and silos, and leverage on technologies that enhance the government delivery of services to "Anak Emas",

(b) the consolidation of government's ICT resources namely people, applications, technology, facilities, and data, as well as

(c) intensifying inter-agency collaboration towards fostering "whole-of-government" public service, where the government agencies work across portfolio boundaries in a collaborative and co-operative environment of open consultation, open data, shared knowledge and learning, consolidation of shared services and enhanced horizontal applications.

The strategic intent of this paper is for the government agencies such as JKM to consider on the proposed ideas, and if deemed necessary, deliberate, refine, plan, develop and implement through the pervasive use of IS for "whole-of-government" delivery by unlocking the full potential of government's IS with a focus on value creation and optimization of government resources.

6. SUMMARY AND CONCLUSION

As Muslims, it is a duty to take care the rights of orphans, including place of residence. They should be treated with special care as mentioned in the Quran and Hadith. If they are not given proper treatment, most likely we are exposed to Allah's wrath for neglecting the people who lost their place of shelter. According to Wan Wan Abd Akashah Hamid, the former Deputy Principal Student Affairs (HEM) Kajang High School Federation, "*They also like other people and need love and affection. Do not feel their confinement but give good treatment*". Hence, this inter-organizational "Anak Emas" System or MyAnakEmas is proposed to be considered, refined, developed and implemented by Jabatan Kebajikan Masyarakat in helping to enhance values and improve the life of orphanage children.

MyAnakEmas is adapted based on Quadruple Helix Model collaborations, "whole-of-government" concept of ICT implementation across the Malaysian government agencies, and applying ICT advances in cloud computing. MyAnakEmas developments augur well for new government suite of service offerings to the orphanage children that support a collaborative and co-operative arrangement of open consultation, open data, shared knowledge and expertise, consolidation of shared services and enhanced MyAnakEmas services. MyAnakEmas software application can be replicated, adapted and roll-out to other states in Malaysia. It is also suggested for MyAnakEmas to be part of IslamGRID portal, operated and owned by Jabatan Kemajuan Islam Malaysia, JAKIM.

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