

## Building the Strategic Pillars for Angkatan Sasterawan 50's Online Information Services

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### ABSTRACT

In this practitioner's paper, we share why and how Angkatan Sasterawan' 50 (ASAS 50) has explored and embraced Web 2.0 technologies extensively to showcase the rich Malay's cultural and literacy materials from the past. At the same time, the integration of such technology and literacy will help to promote the preservation for the future generation in a concerted effort to raise their awareness of the core values and identities of where and who their fore-fathers' were. For a period of about six months, we have been spending time to comprehend the historical backdrop of ASAS 50. It includes the rationale of its creation and where it envisioned being in the future. And for the six months that followed, the actual work of design begun. Thus, we conceptualized a general model based on certain known ones such as Porter Five's Forces to shield ourselves from future coercion (Porter, 2008) and strategic alignment model from Henderson & Venkatraman (1993). The new website is paving ways for marrying new technology with the information needs of the organisation. This movement is to promote literacy to the young generation who are more technologically inclined and exposing them to the importance of the Malay's language, heritage and culture (Delamere, 1996). In order to align with the organisation needs and the technology adoption, ASAS 50 is ready to embrace new social technologies. During the initial phase, the site has received a healthy growth in visitor-ships. Social web systems have offered new opportunities for us to engage the community and produce better search relevancy. The paper only captures the sentiments of the local scene. However, our plan does include the foresight of reaching to other countries. Thus, the idea of the portal being conceived from the beginning adopting English as the main medium to break the language differences was a sound move. The content however remained authentic to its value of Malay roots. The paper recommends the steps of implementing social web components into the uncharted domain of the literacy world. It also highlights the success aspects that can be used for any future literacy and technology collaborations by interested parties.

**Keywords:** Content Management System; Website Revamp; Social Platform; Information Services, Malaysia; Open Knowledge; Malay Literacy Portal, Malaysia; ASAS 50.

### INTRODUCTION

#### *Meaning of the metaphor*

Building The Strategic Pillars for Angkatan Sasterawan 50's Online Information Services is a title that epitomizes the idea to achieve by aligning the needs of the organization and its expansion using web and social components. The strategic pillars exemplify the need to build a strong foundation if ASAS 50 is serious on expanding its presence at international scene too. Its prime aim is to be the one stop locality for the Malay knowledge which is capable to support the future needs of academics and learned individuals. At the same time, it will be used to promote such knowledge to foreign entities beyond the country of origin.

#### *Introduction of current demographic in technology adoption*

Before the introduction of the new technology, the old website was an adaptation of a technology which was incapable to realize future potential milestones. Furthermore, the site was

entirely maintained by an educator with minimal set of web knowledge. It was a far cry back then given the fact that almost all current websites are already embracing social components.

## THE RELATIONSHIP BETWEEN LITERACY & TECHNOLOGY

### *The available technology in the market*

Web 2.0 has brought forth much hype and a golden pot of opportunity. The daunting task of deciding the correct tools to meet ASAS 50's demands and for it to last an unforeseeable number of years has not been easy. After much deliberation of many products, Wordpress was decided as the one to take the lead in revamping the portal.

The reasons for its choice, as shown in Table 1, will be angled from stakeholder's point of view, namely the developer, registered user with and without blogs.

**Table 1: Identification of Stakeholders with Roles and Benefits using the new platform based on the given roles**

Stakeholders	Benefits of using the new platform given roles
<p><u>Developer</u> Developer is the one that does the technical work of setting up the system and ensuring that the system is free from errors. They are also involved in the upgrade of the core system and integration of components or plugins.</p>	<ul style="list-style-type: none"> <li>- Selection of wide number of plugins has been one of reason whereby the system is able to cater to different niche areas or demands of ASAS 50 should the need arise for it to extend its arm into other functionalities.</li> <li>- Availability of numerous themes just like the plugins. This will suit the different styling of the any blog which can be configured to look like an art gallery and so on.</li> </ul>
<p><u>Registered User Without Blogs</u> A user of such profile has a registered account with the portal in which he has the luxury of communicating and sharing literacy ideas with users ranging from known writes, teachers, lecturers and students who have showed certain potential to be part of the members in ASAS 50.</p>	<ul style="list-style-type: none"> <li>- System creates a community feel of having the people of common interests to gather and share their knowledge with the introduction of BuddyPress which permits a forum environment for a one to one or a group based communication.</li> <li>- Each communication thread can be catered for a specified subject domain so that users will be able to differentiate and channel to the appropriate topic of discussion.</li> </ul>
<p><u>Registered User With Blogs</u> This is somewhat similar to the previous stakeholder. The added difference is the availability of having one or more blogs. This means that he can maintain a website for safekeeping, sharing and disseminating his personal works, but at the same time utilizing the name of ASAS 50 as a branding to promote his presence in the surrounding literacy region.</p>	<ul style="list-style-type: none"> <li>- For this last group of user, the important aspect will be keeping abreast with the activities of ASAS 50. A key design concept of Wordpress is the functionality of trackback.</li> <li>- Trackback permits a Wordpress driven blog to track and see if other external sites are utilizing the content of that particular blog. In this way, the user is able to know what was communicated by other parties and it creates a level of opportunity in developing new literacy products or programmes to cater for their needs.</li> </ul>

## THE CURRENT SITUATION OF ASAS 50

Traditional web was incapable to meet the new demands. But for Wordpress, the addition and tweaking of a few plugins will deliever the trick. SEO friendliness is another important aspect. This require the knowledge of the IT and the subject matter experts so that the keywords and some basic technical jargons will be catering to both literacy and the web crawlers, making the site much more prominent than others. Another idea that was brought about is the creation of an online library system. As such, the possibility of using an open source OPAC and complement it with the Wordpress technology. Clearly from the humble points stated before this, the walkthrough of the solution has to be somewhat comprehensive if possible.

**Laying out the strategic adoption and value**

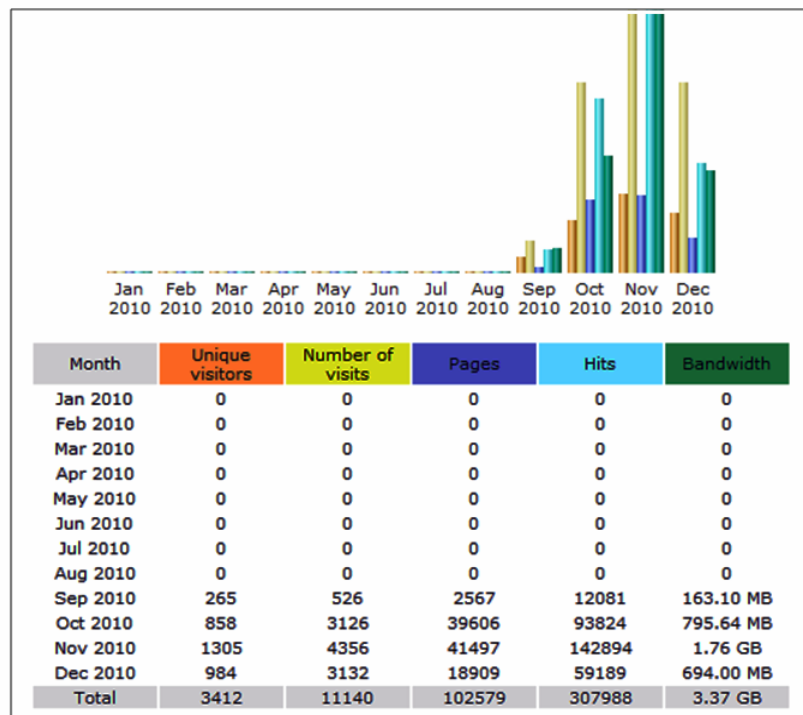
It was time to designate the crucial value factors pertaining to the new website for the purpose of literacy dispersal. The high level factors include the values of strategic technology adoption and creating open access knowledge.

<p><b>The value of strategic technology adoption (Petty, 2009)</b></p> <p><b>Cloud Computing:</b> Google Apps was introduced to allow and utilize the available online tools and perhaps reduce the operational costs that are tied to each of those tools as compared to computer based products. The organisational emails are now created using this technology.</p> <p><b>Advanced Analytics:</b> Advanced analytics is part of the package that is included in the Google Apps. This tool showcases valuable statistics which can be studied upon. It is from here that the determination can be the next course of action to remain competitive and relevant. For example, the number of unique visits informs us that increasing number of distinctive individuals who have been engaging with the portal. On the other hand, the number of visits refers to the total viewership regardless of the unique person. Wordpress has its own analytics that can be used in conjunction to determine the demographic patterns.</p> <p><b>Social Computing:</b> No longer bounded by elements which stop one from learning across borders. Instead the elements have turned in dynamics of possibilities as anyone is able to acquire, sustain and contribute their literacy thoughts. For example a writer is able to communicate with his fellow local writers on certain topics. And at the same time he is able to befriend new ones from an international scene should there be a trackback trace by somebody unknown to him if his works were being cited. But the influence of social computing is not limited to the Wordpress platform only. The platform is included with the mechanisms to spread the presence of the writer's works and interest by riding on the social network of Facebook. Other capabilities of the new portal include automatic propagation of status updates from BuddyPress to Twitter or Facebook, and sharing of postings to his Facebook's wall. In the future, the possible integration with YouTube if ASAS 50 wishes to venture into literary arts and music scene.</p> <p><b>Mobile Applications:</b> This factor complements social computing and brings forth the experience of mobility to the next level. The outmoded method of informing the avid readers via websites is somewhat a norm such as getting in touch with a computer station and glancing through the articles accordingly. But with modernization of technology, users can do so in between travelling times or journeys. Currently, the new portal has an iPhone's friendly touch screen application permits regular updates, communication and forum engagement.</p>
<p><b>The value of creating open access knowledge</b></p> <p>The current issue includes the inability to share and learn the knowledge that has been existed since the dawn of Malay literacy and culture in a faster yet efficient manner. The scriptures and literal works are still in the form of paperbacks or time worn mediums that may not with-stand the test of time. That coupled with the lost tacit knowledge which was poorly documented or perhaps undocumented to a certain magnitude, thus creating an appalling situation whereby the value of literacy understanding for Malay studies is on a declining plateau.</p> <p>As a result, past materials will be great to be digitized and kept online for ease of access. By delivering this, the ability to safe keep the original copies into apposite archival systems via systematic procedures are planned. This will ensure that the authenticity of those materials is well observed. Next, digital format is an fitting technique for knowledge sharing and dissemination, thus reducing the gap between for the younger age band in their knowledge quest (Das, 2008). The benefit does not stagnant in one age locality only; instead the benefits can be enjoyed at the community level. Having a open access means that the society becomes more aware of its natural heritage whereby even the elder generations can relish reading such materials virtually as the portal is accessible from the comfort of computers or various portable devices.</p> <p>How about addressing concerns associated at the national's arena? The pedagogical department addresses the inability for the Malay teachers to neither discover nor create suitable and better teaching techniques. One of the many reasons for this disability is the amount of emphasis being placed onto them for administration tasks which reduce the time for any research work. A woe of an entity is indeed an opportunity for another in this particular case. As such, teachers can look forward to a large array of quality pedagogy materials at their disposal via this portal, making it a one-stop market place for sustaining their teaching needs.</p> <p>The next vital issue is ensuring that the knowledge creditability is well preserved and upheld. Even though the inclined is much towards the quantity of materials that can be made available online, there should not be any compromise on the quality. As such, a systematic processes and workflows are in place, whereby a registered member can submit proposed articles for consideration. Upon submission, an email will be received by the subject matter expert who in turn will review the creditability value of that article. There are currently two types of authoritative resources which are undergoing this consolidation process, namely the directory of resources and the directory of writers. The directory of resources contains the list of tools, literacy websites or other eminence materials which are useful for educators, academics and students.</p>

The directory of writers is to create an awareness to the general public of the wealth of Malay writers that are both in existence or otherwise in this region. Their contributions are also references or trade for researchers as well as players and fans of local and foreign literature. This idea was conceived by Dr Masuri Bin Salikun, Head of a Literary Force 50 (Base 50) during an executive meeting in 2003. As a result of this, a book containing the lexicon of Malay writers was produced in collaboration with National Library Board of Singapore (NLB). Below are figures of the mentioned directories:

### STATISTICAL SNAPSHOTS

Below is the showcase on the access statistics that have been making its way through the portal since its official launch in November 2010.



**Figure 3: Monthly History (Sept – Dec 2010)**

Figure 3 is a statistical snapshot taken and captured from server level. It represents the numerical factors of unique visits, number of visits, pages, hits and utilized bandwidth from the month of September 2010 till December 2010.

Below is the definition of each factor:

- Unique Visitor: The number of unique person visiting the website, namely counting each visitor only once.
- Number of Visits: The total amount of repeated views, regardless of unique persons.
- Pages Visited: The total number of times the portal was visited.
- Hits: Robots, agents and non-human intervention in accessing the site.
- Bandwidth: The total amount of internet bandwidth used during that period of access via the factors stated above.

The figure showed that the portal became live in the month of September. The requirements gathering and system design occupied the period of January till August. The statistic was not entirely that impressive during September. But a different pattern beckoned in October. It was during this period that gradually announcing to the members of ASAS 50 on the availability of the new portal. The opportunity was also leveraged to educate the users on the portal's utilization basics and initiating more relevant contents. Furthermore it was indefinitely a vital period for the organisation as it would be celebrating the 60th anniversary in November

2010. It was a timely proceeding to officiate the portal with the presence of significant guests from various government and private entities such as Mendaki, Association of Malay Professionals, National Library Board and Minister for Information, Communications and the Arts following with an official announcement was made on the national news channel. The number of hits rose to about a hundred and fourteen thousands which was a positive difference of about fifty thousand than in the previously month. And by December 2010, the total hits were about three hundred and seven thousands.


























Countries (Top 25) - Full list					
Countries		Pages	Hits	Bandwidth	
	Singapore	sg	10281	34426	383.77 MB
	United States	us	5468	12459	111.35 MB
	Malaysia	my	1145	5908	85.47 MB
	Indonesia	id	263	989	14.18 MB
	Moldova	md	241	241	13.61 MB
	Unknown	ap	221	1142	7.14 MB
	Italy	it	215	215	9.91 MB
	China	cn	139	253	5.76 MB
	Great Britain	gb	128	555	9.03 MB
	Russian Federation	ru	117	333	7.54 MB
	Canada	ca	98	485	7.10 MB
	Germany	de	90	341	5.70 MB
	Japan	jp	83	320	3.39 MB
	Saudi Arabia	sa	69	188	1.81 MB
	Ukraine	ua	61	61	235.40 KB
	Philippines	ph	40	328	3.82 MB
	Netherlands	nl	33	33	1.21 MB
	Sweden	se	21	21	1.23 MB
	Slovak Republic	sk	20	20	1.15 MB
	European country	eu	17	145	2.75 MB
	Latvia	lv	16	16	784.66 KB
	India	in	15	154	3.32 MB
	Brazil	br	11	12	719.85 KB
	Taiwan	tw	9	76	882.80 KB
	Thailand	th	9	85	2.05 MB
	Others		99	383	10.13 MB

Figure 4: Demographic of visits by country in December 2010

Figure 4 showcases an intriguing fact. It clearly showed that Singapore, being the country of the portal's origin, has the most number of visits. The regional countries such as Malaysia and Indonesia were in the third and fourth position respectively. This was an encouraging trend as a whole since other nations are currently aware of regional presence that ASAS 50 wishes to extend upon via its web presence. However, remaining visiting countries, it is realized that the potential benefit have soared beyond the regional vicinity. In the long run, this can be mould this opportunity on an international's marketplace, provided the solidifications of the activities and literacy works within this region have been met with a certain degree of prominence and fulfilment.

Book Discourse - Present	<b>340</b>
Organizational Committee	<b>196</b>
Asas '50 celebrates 60 years of literary excellence	<b>189</b>
About	<b>158</b>
- National Library Board (Category) -	<b>153</b>
Mission	<b>115</b>
Directory of Malay Knowledge & Resources	<b>109</b>
Celebrating 60th years : Furama City Centre	<b>103</b>
Contact Us	<b>100</b>
A Music Poetry Album - Warkah Cinta Dunia	<b>99</b>
Upsi, Asas 50 jalin kerjasama	<b>97</b>
Apply for a blog or website	<b>93</b>
Launching of eBook : Asas'50 Dalam Esei Dan Kritikan	<b>93</b>
Belia ASAS' 50	<b>90</b>
Programmes	<b>86</b>
Affiliations and Partners	<b>86</b>
Creative Writings	<b>71</b>
Penyair marhaen muda hasilkan antologi sajak	<b>66</b>
Bibliotherapy at Pertapis - A Reflection	<b>61</b>
ASAS'50 NAC International Residency Programme 2010	<b>56</b>

Figure 5: Visitors per Post in December 2010

Figure 5 showcases the number of visitors that each post has received in the month of December 2010. The activity, Book Discourse – Present, was a critical discussion during a discourse session with the author, Serene Wee. It took poll position during this statistical snapshot versus other postings. This posting was occupying the landing page of the portal during that certain period in time. This is circuitously a benchmark to recognize the interest of the readers.

## POTENTIAL PROJECTS

There is much excitement over the projected projects. It is not possible to mention all of them as ideas kept pouring in from the various members within the organisation's hierarchy. Nevertheless, below were the ones which have been approved by the organisation's primary committee, out of which some have been considered to be sufficiently worthy for entreating funds from respective government agencies.

### *Digital gallery*

One of the desired endeavours will be setting up of a digital gallery for the showcasing of digitized pictures. The focus here will be a proper cataloguing mechanism with suffice metadata to explain these digital substances. Some parameters may include the name of author, creation date, drawing medium, short excerpts to enlighten the readers on the intent or representation of the digitized asset. Currently, a number of open source products are in the midst of evaluating to meet this request. The challenging part will be integrating the selected product with the new portal.

**Blog sites for members and flagship programmes**

Members are encouraged to use their personal blog sites for intubating their school related assignment such as poems, short stories and literacy thoughts. There is no criterion for whatever that they wish to upload online. Instead the encouragement will be from the winning situation for both ends. Literacy works which are stored here will be safe kept in which will form a proper publication after a period of time. On a serious note, flagship programmes such as Heartland Poet are indeterminately required for such blog setups. It is from such online presence that the potential to inform the public viewers of the organisation’s various and diverse programmes.

**Online library system with OPAC capabilities**

This particular project will be utilizing the funds provided by certain government agencies which are primarily interested in the work of literacy, language and so forth. One of the leading reasons for the requested funds will be the tremendous of work that is required to scan and digitize copies of old manuscripts and publications. It will be a tedious and painstaking process. As such, the funds will alleviate some part of the issue by outsourcing those mechanical errands to external vendors that possesses suitable experience and tools at their disposals. The other major part will be cataloguing these materials and making them available at ASAS 50’s new office, which is due to be ready around the middle of this year. As such, the venturing and exploring will lead to a variety of open source OPAC software. With the availability of such a system, ASAS 50 hopes that this creates a pavement of opportunity to form a genuinely decent library to conserve and stimulate literacy understanding and education to the next stratum.

**THE LEARNING JOURNEY**

**Model: The strategic alignment model**

Henderson & Venkatraman (1993) argued that one reason for the failure to see the value from IT investment is the absence of common understanding and alignment of the business and the IT factors. As such both introduced a mechanism of bridging this gap together via the strategic alignment model as seen here.

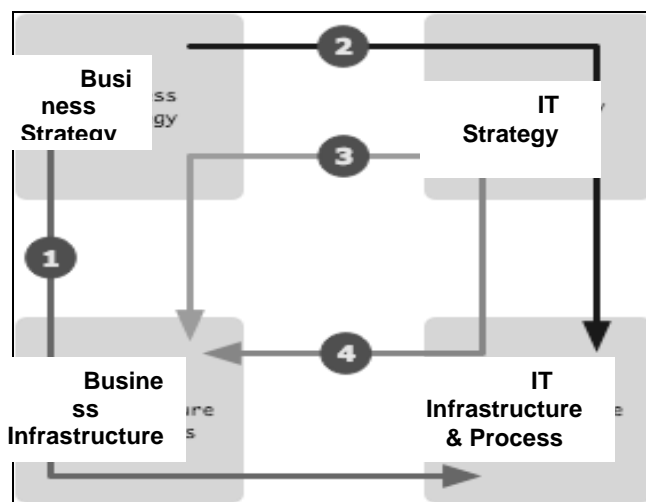


Figure 6: Strategic Alignment Model adopted from <http://visual.placodermi.org/2009/01/15/toolkit-the-strategic-alignment-model/>

Each line represents the different perspectives of how both IT and business can work together and reach the potential benefit.

The initial approach has been the line 2, whereby the organisation lacked the technical knowledge and depth to decide on the next course of action. The management has agreed to permit the new IT specialists to recommend probable solutions to meet its demands. As such, fitting technologies such as Wordpress, Buddypress, Facebook, Twitter and so forth were introduced as the initial solutions. The current content was moved accordingly and new ones were shaped to suit the design of the new portal such as usage policies, directory listings and so forth.

But the realisation on this model was only suitable for the initial start-up phase. We believed that gaining competitive advantage is the long term goal and this is seconded by line 3 of the strategic alignment model. The reason is simple; competitors will realize the attained benefits and they will seek ways to supersede our achievements. The model in the next section will detail a breakdown of why creating barriers to entry, product substitution and so forth are important factors for consideration in ensuring that the organisation stays afloat.

### **Model: Porter's Five Forces**

Existing literacy players have been a strong advocate of technology adaptation. As such the barriers created by such entities will be a challenge to be met if ASAS 50 were to propel ahead and take the literacy lead in this region. This factor has been adopted from the Porter's Five Forces, as seen from the following figure, which indicated the probable influential dynamics to sustain a business model. This approach allows the continuation to be innovative and discover new tools and technology concepts which can enhance the learning experience and social engagement of the keen followers. One of them includes the introduction of Buddypress to create a forum like community whereby individuals from any walk of life may communicate, discover, exchange and apply knowledge. Another idea will be setting up of the digital gallery and online OPAC system which other non-profit organisation have yet to embrace.

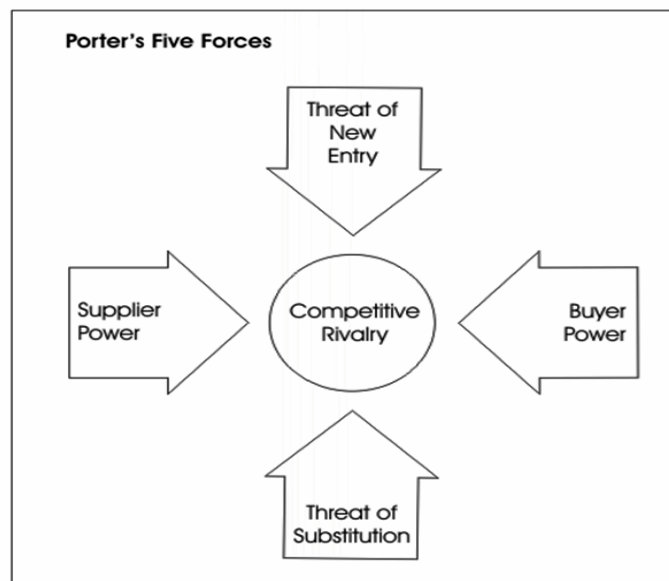


Figure 7: Porter's Five Forces Model

The bargaining power of buyers is another factor from Porter's. But in this context, it is relevant to name it as the bargaining power of users. And, define it as a choice for the writers to use the portal or otherwise. Besides creating and providing valuable information at their fingertips, the concerned was on the enormous amount of details may be too substantial for the cognitive experience of the users. As such, investing the time and effort to fashion a suitable information architecture and navigation scheme to simplify the portal's usage. It will be discussed with greater detail in the following section '*Benefits gained during the development*'. This factor is especially applicable to the older folks in general due to their slower perception of



the technology domain. One way to allure the bargaining power of users is via crowd sourcing using English language as the medium to spread and inform the non- Malay community of the literacy activities and established works on the portal.

Now, with regards to the bargaining power of suppliers as the availability of products which can be both obtained from the open source community or professional companies. The initial design has always been using low cost development tools which will not incur extensive operational budget. And there are definitely plenty to be considered for the vast and dynamic usage of ASAS 50. Credible sites such as The Chronicle are good sources of updates and critiques for significant products. However, in the long run, the perceived was on the issue of maintenance if the content gets more extensive. As such the plan will be to raise sufficient capitals for external vendor support. The funds are be generated from workshops, publication sales and public or private funds.

Product substitute refers to the ability to reduce the rivalry's threat by creating an information resource that maintains the engagement factor of the users. The creation of two directory listings mentioned before this fits this bill whereby the prime intention will be consolidating of the useful and practical Web 2.0 tools under one roof. A future endeavour will be adding the critique explanations on the intent of using each tool and match its suitability to the element of pedagogical teaching. The directory of writers was a classical publication created in conjunction with the National Library Board of Singapore. And now, the portal has turned it into an online resource which shaped decent remunerations, namely increasing the awareness of the general public on the prolific writers in this region and raising the visitor-ship count of the portal which justifies its development effort for the promotion and sustenance of literacy.

### ***Benefits gained during the development***

There are definitely plenty of benefits which have gathered along this journey and worth to be mentioned upon.

Firstly the comprehension of a different kind of requirement, in which to date, either little studies or effort has been done to sustain the literacy works in this region particularly for the Malay literature in general. The solution for each issue has to be addressed in the context of the general public in which they may not be entirely technologically mindful or inclined. At the same time, to balance a factual note that it should not deviate too much from harnessing the power of Web 2.0, easy maintainability but permitting high amalgamation and scalability with other technology products.

Exploration of new technologies has empowered the portal with new ideas, knowledge, concepts and even positive arguments in order to seek the appropriate tools for the world of literacy diffusion. This can in turn be an asset to ASAS 50 as its attained certain degree of products' know-how whereby the potential to render the services to interested parties that sees a need to adopt a similar methodical approach in revamping their online presence.

Matching the technology's abilities to different literacy work has not been a walk in the park. There was much to be discussed and settled in the beginning. For example, what content or postings should take precedence on the main landing page. Next is to deliberate on the navigation architecture so that it will not only look scholarly professional, but at the same time a user will not face cognitive nightmares during consumption of the structure at first glance. Poor navigation design may render impulsive reactions from the user, which in turn decreases the visitor-ship.

Information architecture is another important aspect to be looked upon with certain degree of enormity. The words, labels, text captions have to be organized appropriately in certain logical grouping that suits the context of literacy and pedagogical subjects.

All of these factors were discoursed to ensure that the cognitive engagement will not be broken easily and even if there a change of milieu, the difference will be subtle and not too dire.

### ***The difficulties***

A major issue was informing the new users on the capability of the new blog system. This portal is far from the normal stagnant website that does not provided any other apparent benefits other than constructing an online presence. The new technology encloses useful mechanism such as trackbacks, graphical and numerical analytical breakdowns, and customizable keywords for

search engine optimization, Facebook and Twitter integrations. These are more than just mere tools at the hand of novice users. One of the key solutions to such a problem will be the continuous education.

The next issue is a major bulk of the literacy works are in the form of Malay language. The issue that lied ahead was informing the public readers and users of the purpose, mission statement and event updates. Rationally and traditionally, the portal should be in Malay. However, after much debate and deliberation, we have decided that the main language to promote and endorse the literacy works will be utilizing common English as it was after-all a national language. This was a captivating situation in which we are in line with the nation's proposal for a healthy inter-racial society that is fully integrated and respectful towards one another.

## CONCLUSION

ASAS 50 recently adopted a strategic social web mechanism to align the organization's online presence and the value of knowledge creation and sharing. This technological adaptation enables a content management system to be used as a corporate website that serves the original purposes of ASAS 50's, as well as a social platform which extends the social interaction to the community at large. This initiative is the first in-house New Media project towards the efforts in building an open access knowledge platform that is scalable, flexible and has the growth potentials for the next generation of library and information science systems to be integrated with her core technology. ASAS 50 envisage being a dynamic literary institution and movement with a mission to infuse literary arts into the lives of the masses in this region and possibly beyond.

## REFERENCES

- Das, A. K. (2008). *Scholarly Literature and Digital Library Initiatives*.
- Delamere, T. (1996). The importance of interlanguage errors with respect to stereotyping by native speakers in their judgements of second language learners' performance. *System*, 24(3), 279-297.
- Durai, J. (2011, January 19). More schools to offer higher-level Malay electives. *Straits Times*.
- Expanding Malay vocabulary with card game. (2011, January 27). *Straits Times*.
- Henderson, J. C., & Venkatraman, N. (1993). Strategic alignment: leveraging information technology for transforming organizations. *IBM Syst. J.*, 32(1), 4-16.
- More funds for Malay language activities. (2011, March 15). *Straits Times*.
- Nanda, a. (2011, February 7). Seeker of truth. *Straits Times*.
- Pettey, C. (2009). *Gartner Identifies the Top 10 Strategic Technologies for 2010*.
- Porter, M. E. (2008). The Five Competitive Forces That Shape Strategy. *Harvard Business Review*, 86(1), 78-93.