From Data to Celebration of Cultural Heritages: Preservations, Acquisitions, and Intellectual Property Regulations

Situngkir, Hokky

Indonesian Archipelago Cultural Initiatives, Bandung Fe Institute

26 November 2010

From Data to Celebration of Cultural Heritages [*)]

Preservations, Acquisitions, and Intellectual Property Regulations

Hokky Situngkir[**)]

A true tradition is not the witnessing of a past closed and finished;
it is a living force that animates and informs the present.
IGOR STRAVINSKY

1. Participatory Data Mining

There are more than 300 ethnic groups in Indonesia and most of them are still living with their traditional rites, dances, fabrics, architecture, etc. along with their modern living. The living heterogeneous cultures are signed with almost 7% of the total living languages noted in the world [4]. Each culture have their own stories, ways of life, and collective wisdoms as reflected in their cultural heritages that are traditional yet have merged into our modern times.

The long run evolution of ethnic groups in Indonesian archipelago has enriched the cultural objects, by assimilation with other ethnicities' as well as the modern artifacts. Thus, the high diversity has been even greater for the innovation and the trends of creative economics [9] using traditional ideas in the designs of modern products, for example, traditional motifs used in modern clothing or as decorations to modern devices, traditional songs re-arranged in modern musical pieces, *et cetera*. The modern economic trends have seen the traditional cultures as a sort of creativity landscape for exciting innovation.

While the social and economic trends urges the need for a data bank that potentially gives ideas for further innovation and creative explorations, until two years ago, there haven't any of initiatives to establish such information portal. Yet, there have been great interests to collect the data in decentralized cultural and ethnic pockets and local initiatives throughout the archipelago. How to provide a place where all of the cultural objects for easy access by overcoming the difficulties as elaborated above is a challenge as we propose the implementation of web 2.0 solution [8]. This establishes a kind of data base models that would be,

1. ***Participatory,*** the peer content management in which users may update the cultural data with the same privilege and rights.
2. ***Decentralized System,*** participants of data collecting process do not have to be at the same place geographically.
3. ***Connected***, all users and participants are possible to communicate and discuss related to the data within the web one another through a website.
4. ***Emergence,*** the active communications and contributions would be expected emerges bottom-up characteristics of the system that grows organically. [2].

[*)] Article prepared for *National Workshop on Intellectual Property and the Documentation and Establishment of Databases of Traditional Knowledge, Folklore, and Intangible Cultural Heritage*, Bandung November 25th-26th 2010.

[**)] Research Fellow in Bandung Fe Institute and now active in Indonesia Archipelago Cultural Initiatives.
Contact: `http://www.bandungfe.net/hs`

The programming system that is incorporated in the www.budaya-indonesia.org is MediaWiki, an open-source system with strong reliability and endurance that has been years used as computational platform in the internet encyclopedia, Wikipedia [5]. In the website, the visitors are expected to be user and collaborated for updating (and/or editing) the data altogether by the existing pages showing the data, as well as the provided page for discussions about it. Thus when the data is there, the debate is still wide-open for polemic among users that might be anthropologists, cultural heritage custodians, regional government, students, *et cetera* [1]. As the database employs the open-source platform, the migrations and maintenance of data would be easily held in the future evaluation of the system at lowest cost.

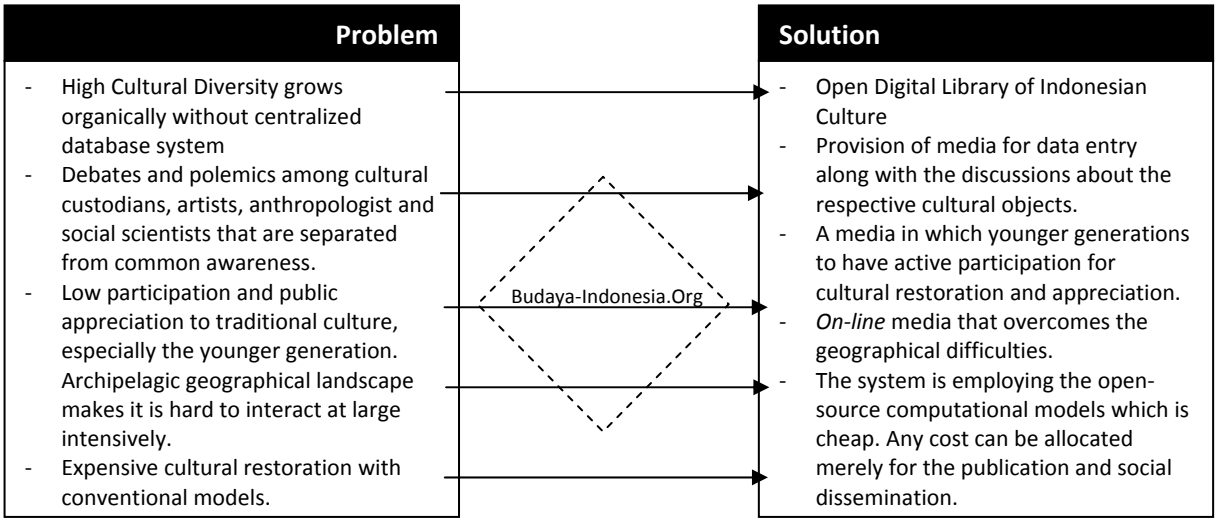

Figure 1. The map of problems and solutions with the www.Budaya-Indonesia.Org

2. Modern Sciences and Arts observes to Indonesian Traditional Cultural Heritage

After almost two years of the website, the collected cultural items have been more than 15.000 with the web-visit more than a million and more than 10.000 editings. Many things are awaited to do with the data. Along the years, there have been many things brought, from scientific researches to activities of creative-based economy.

For instance, there have been more than 2500 entries of batik designs now in the website (other motifs of woven fabrics are excluded) from all over the places in the archipelago. This makes it possible to have deeper analysis of Indonesian batik designs. An interesting finding is the fractal geometry in Indonesian batik designs. The geometry that is incorporated in batik designs are fractal and it's fractal dimensions are one of the aspects that made a motif different with the other one. Indonesian batik from places to places, in some cases, can be differed with "computational eyes" by calculating the fractal dimensions. The modern Yogyakarta King, Sri Sultan Hamengkubuwono X, commented this finding as a possible conjecture to see how Javanese ancestor might do their ancient mathematics [12]. When we can measure the "geometry" of the batik designs, it has been possible now for us to generate batik motifs computationally. This is now what becomes well-known recently: the Batik Fractal. When computation merges with Indonesian traditional motifs, it gives a new economic potentials in which inspired traditional batik designs to be applied not only for traditional fabrics and purposes[1].

[1] Batik Fractal is now in the a proxy of creative economics. The computational application of batik is employed in t-shirts, jackets, caps, and so on even transforming the company logo by employing the geometry of batik as

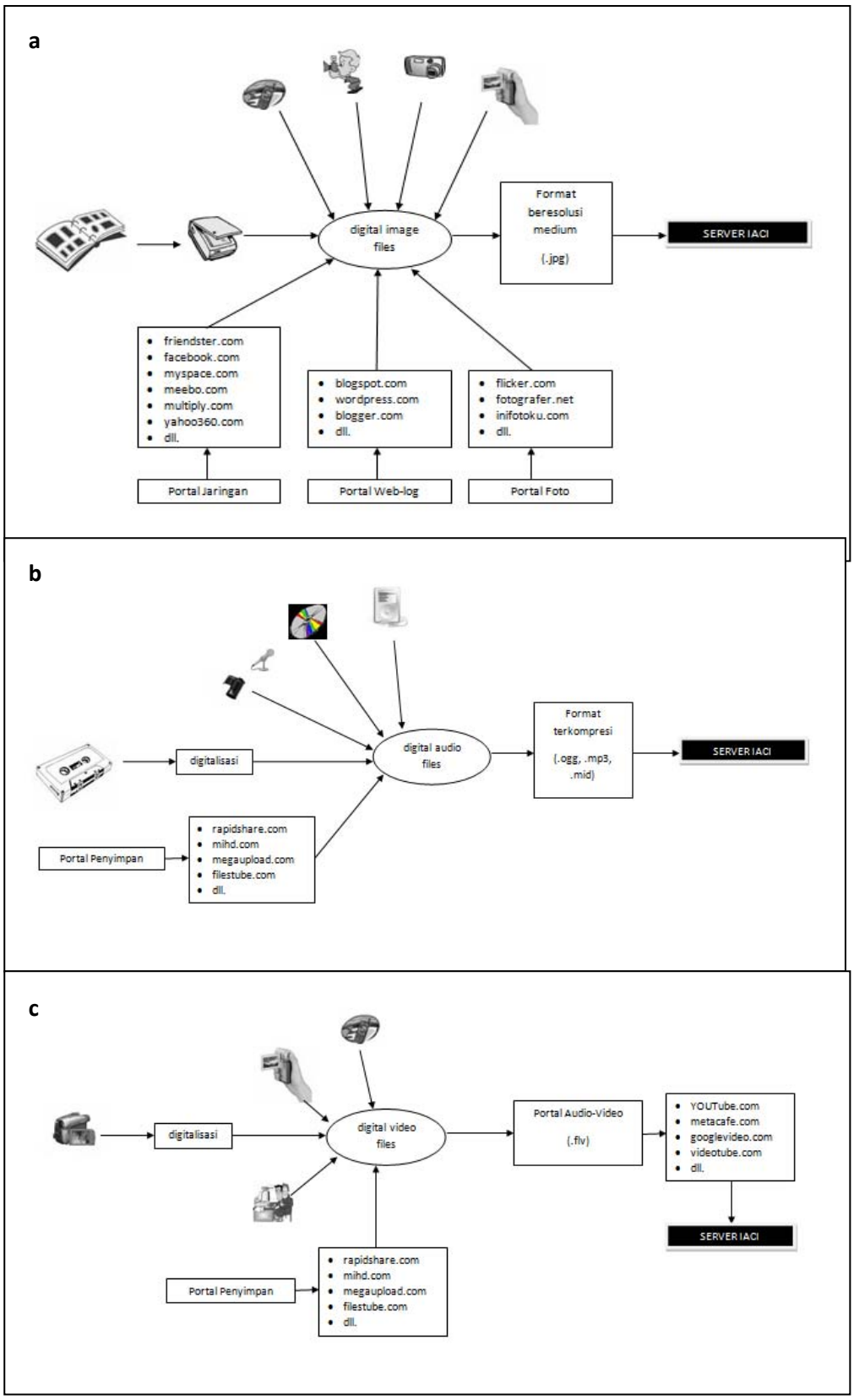

Figure 2. Participatory Documentation System in Budaya-Indonesia.Org for image (a), audio (b), and video (c)

---

shown in : `http://www.acrobatik.biz/`. Most of the sales are then used to maintain the website `www.budaya-indonesia.org`

This is an interesting point as it is now possible to crunch thousands data image of Indonesian batik regarding to their fractal dimensions, histograms of the colors (most traditional batik uses the organic and natural colorings), and so on, to see how they are clustered in such ways to see the emerging clustering. Interestingly, the basic variables show how the coloring techniques and the geometry used in the batik fabrics are unique for ones from different places in Indonesia. This is shown in figure 3 [10]. Batik from Pekalongan (Central Java) are clustered altogether, as well as batik from Yogyakarta, Solo, Wes Java, and all other batik motifs from places outside Java. Obviously, this brings some enrichment to anthropology and other humanity sciences[2].

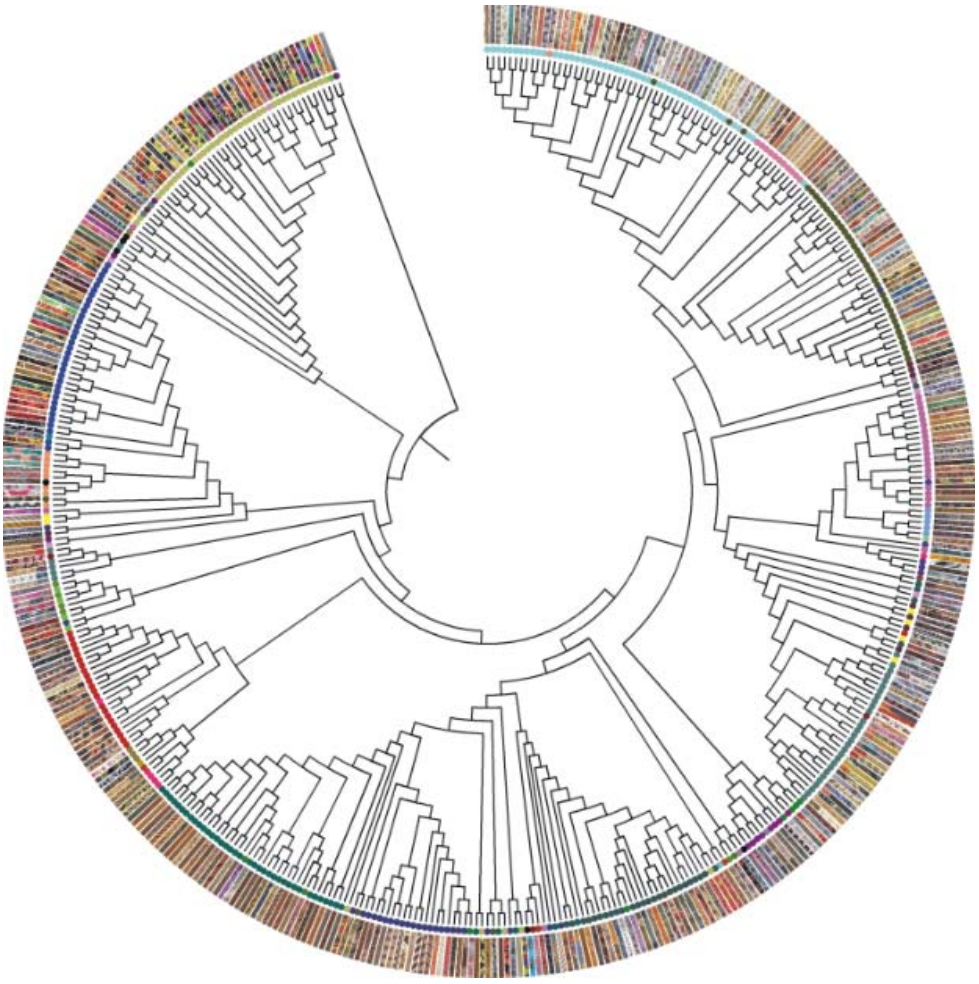

Figure 3
The phylomemetic tree of Indonesian Batik: the same colors represent the same ethnic groups

The similar cases are also conducted to Indonesian traditional songs. There have been more than 500 songs now recorded in the website, and most of them can be converted into the standard digital musical format (MIDI). The latter makes it possible to observe the mapping of songs into (western) musical notations of the music. Employing some interdisciplinary analysis into the songs, we crunch the data and see how folk songs from places to places are clustered altogether. It seems that we

[2] High quality of the phylomemetic diagrams of Indonesian batik can be accessed in:
`http://compsoc.bandungfe.net/kartografi-indonesia/motif-EN.html`

might have some sort of elementary units differing songs from places to places in the archipelago. The ethnic-clustering of Indonesian ethnography based on the traditional songs is thus revealed [7]. In advance, some economic aspects could be also derived from the research, as the complex characteristics of Indonesian songs can be incorporated the generative art of music[3]. The generated songs based on the data have been made it possible to launch the first album of songs generated computationally that is probably the first in Asia regions. Here, the songs are generated by computer by computationally (automatically) reading the characteristics of Indonesian traditional songs. For instance, we can now have the computer to generate a songs with similar complex characteristics with the folk songs “O Ina ni Keke”, a song from Minahasa, northern Sulawesi.

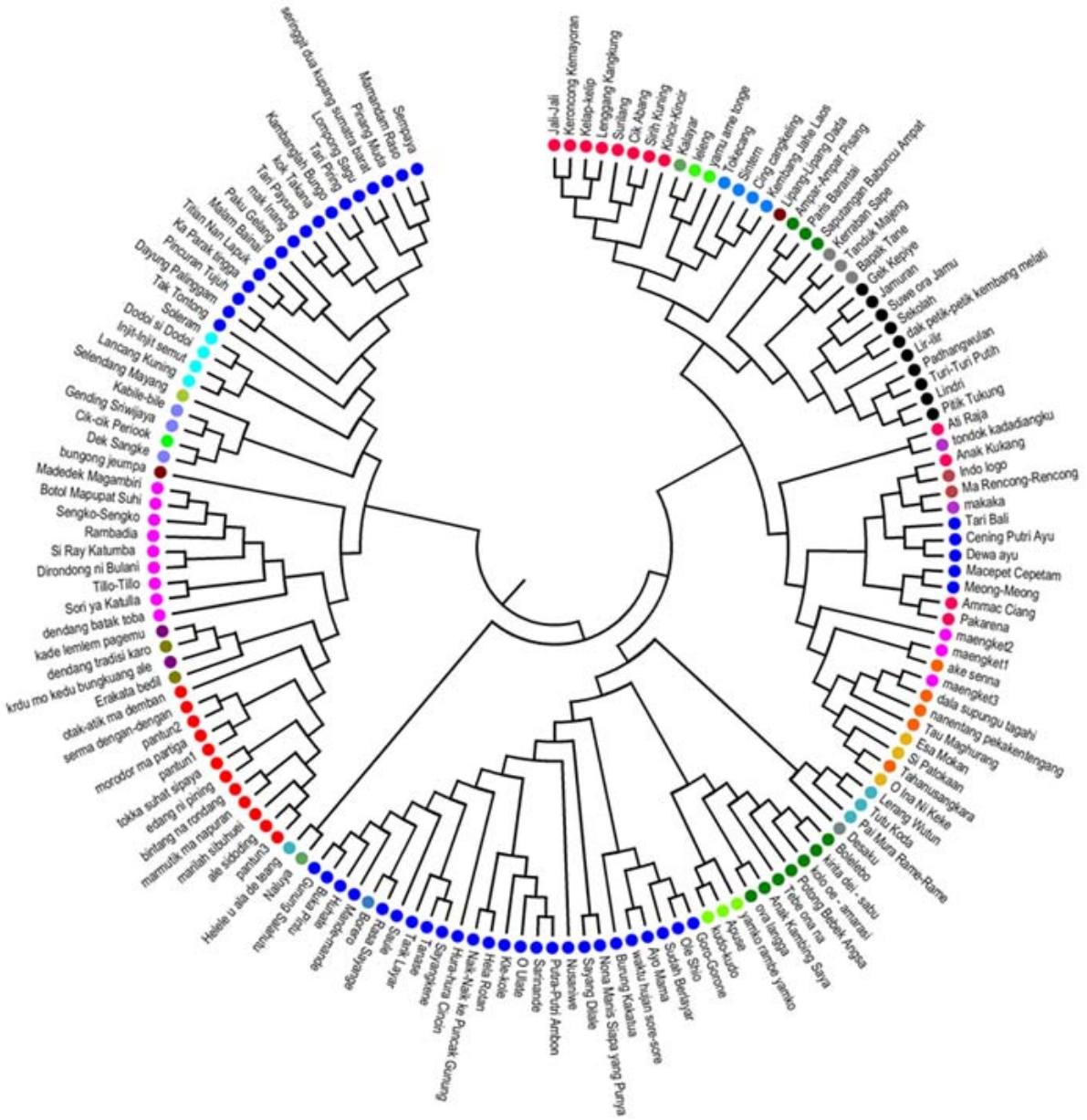

Figure 4

The phylomemetic tree of Indonesian traditional songs: the same colors represent the same ethnic groups

[3] High quality of the phylomemetic tree of the Indonesian traditional songs and the development of generative music based on Indonesian traditional songs can be accessed in: `http://genmuse.bandungfe.net/`

However, the listed data in the participatory websites are felt to be so little, relative to the vast data of Indonesian traditional cultural heritages spreading in the archipelago. Thousands of dances, songs, architectural designs, ornamentation, traditional folklores, and fabric motifs are there to be revealed by our endeavors in the data mining processes. Obviously, this is nothing compared to the emerging analytical and creative explorations on the wisdoms may inherently exist on each of them. Another proxy is the measurements that conducted in some of Indonesian ancient temples (*candi*) in the island of Java. The measurements of Borobudur, Mendut, Prambanan, Sukuh, and Cangkuang has made it possible to employ modern observation incorporating the fractal geometry to ancient architectural designs. This recent finding shows that while Indonesian traditional batik shows the implementation of fractal geometry in 2-dimensional space, the ancient architectural designs exhibits the works of fractal geometry in 3-dimensional forms. For instance, the careful measurements and calculations to Borobudur Temple shows how the self-similarity aspects are shown in the designs giving us a remarks that while Borobudur was consisted with hundreds of small stupas, the temple itself is a giant stupa [11]. It is interesting that we can have such remarks computationally – and this can only be reached by having data In our hands.

In Indonesian perspective, having the data is important for [3]:

- ✓ Cultural Restoration or even national "renaissance"
- ✓ Economic Values using Traditional Culture as Creativity Landscapes
- ✓ The importance of cultural and travels businesses
- ✓ Education for young generations related to understanding on their cultural roots.

while for the general and humanity perspective, the available data portal gives our modern civilization an opportunity to

- ✓ Enhance the research for understanding human cultural evolution
- ✓ Ethno-clustering analysis in the management sciences

Data is so important to let Indonesian know themselves, as one of the nations in the world with so diverse living ethnicities. Each ethnic group expresses has evolved hundreds (and even thousands) of years uniquely until today interacting and living harmoniously with modern world. Those ethnicities are not only exotic for performances, shows, craft trades, or visits. Comprehensive approach on them might tell us more about who we are.

Figure 5
The illustrations of the proposal for the *Nusantara Cultural Heritage State License* (NCHSL)

3. Preservation, Acquisition, and Regulation

A lot of questions are arisen when we talk about who owns all of the cultural objects. Definitely, the owners of them all are the species of human being, since they are sprites among the spectral world cultural heritages. Observing the diversity of Indonesian traditional cultural data gives us an appearance of the local spectrum within world cultural spectrum. Lucky for us that they are all now below an umbrella of a national property: The Republic of Indonesia. Yet, when it comes to intellectual property rights, the owner in the manner of management is in question. Conventional legal terms gives two continuums: the local community (custodian) has it, or it is just a free public domains. Both arises new problems.

When we said that certain custodians (e.g.: regional governments, local companies) should claim the intellectual property rights, this might arise conflict between parts of the community feeling it is their rights to innovate, develop, and improve certain tangible cultural heritages. For instance, one might ask who are the custodians of the unique "Mega Mendung" batik motifs from West Java? Some people in Cirebon, Inderamayu, Garut, and even some batik centers in Central Java and Eastern Java might claim that they have rights to develop the motifs in their batik, as well as, making profitable business with it. It is a daunting task to force ourselves to validate the large amounts of cultural heritages. However, if we just easily said that it is might be merely the property of public international-wise, we should think that it is also important to preserve the traditional values within all of the cultural objects rather than just open it up and left the traditional production proxies. The previous presentation shows this.

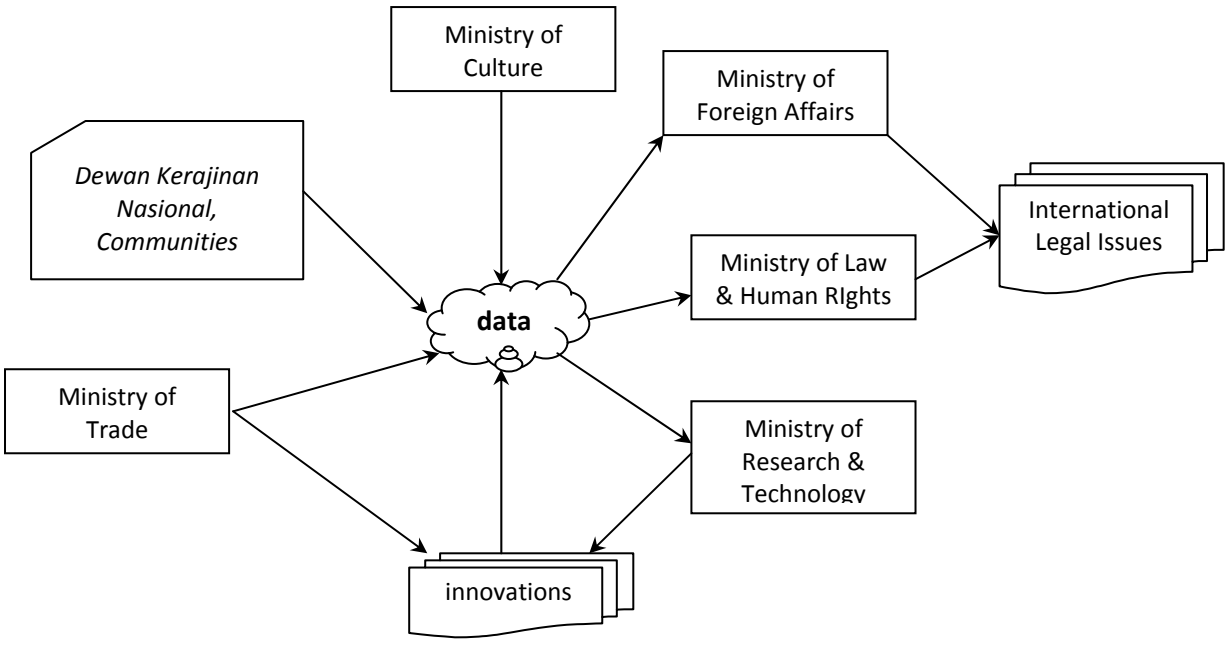

Figure 6
Inter-departmental data flows and traffic.

The Indonesian Archipelago Cultural Initiatives, while documenting the data via the web 2.0 also open discussions and eventually propose a unique way to regulate the tangible cultural heritages. The legal proposal is entitled the Nusantara Cultural Heritage State License (NCHSL). This gives license to the government of the Republic of Indonesia to maintain and manage the spectrum of the

diverse cultural richness[4]. This legal solution is a proposal that might be useful to resolve the difficulties on the legal status of the highly heterogeneous living Indonesian traditional culture that only provide the private proprietary rights and public licenses.

4. Closing Remarks

Our adventure exploring the data mining as summarized in the previous sections gives us a reflection that data is so valuable art-wise, science-wise, social-wise, and definitely economic-wise. It is interesting to see the traditional cultural heritage lives and still in their innovation for more until today. Speaking in governmental terms, Indonesian cultural heritages are now giving impacts in inter-departmental or inter-ministries in the government.

The traditional heritages are still alive until today, managed inter-domains of governmental sectors. The general preservation is related to the working Departemen Budaya & Pariwisata (Culture), the science and technology issues are brought by the Kementerian Riset & Teknologi (Science & Technology), the innovation, improvement, and development is related to the Departemen Perdagangan (Trade), as to the legal issues are handled by the Departemen Hukum dan HAM (Legal) and the Departemen Luar Negeri (Foreign Affairs). The tangible cultural heritages should be managed inter-departmental wise. The monolithic approach would only ruin the complexity of the issue as we have seen in the previous sections, and the problem we face from the first section a far from being solved. And while we weigh on the advantage that humanity sciences would gain from the deeper exploration to the celebration of diversity in Indonesia, it becomes a task of humanity to do things right.

Works Cited:

[1] Awazu, Y., & Desouza, K. (2004). Open knowledge management: Lessons from the open source revolution. *Journal of the American Society for Information Science and Technology* 55(11).

[2] Choate, M. (2007). *Professional Wikis*. Wiley Publishing, Inc. Indiana, USA.

[3] Dahlan, R. M. (2009). "Menggambar Neksus Tiga Titik: Sebuah Rekomendasi Saintifik Untuk Kebangkitan Indonesia". *BFI Working Paper Series* WP-1-2009. Bandung Fe Institute.

[4] Lewis, M. Paul (ed.). 2009. *Ethnologue: Languages of the World, 16th edition*. SIL International.

[5] Nov, O. & Kuk. G. (2008). "Open source content contributors' response to free-riding: The effect of personality and context". *Computers in Human Behavior*. doi:10.1016/j.chb.2008.04.009

[6] Khanafiah, D., & Situngkir, H. (2009). "Memetics of Ethno-Clustering Analysis". *Journal of Social Complexity* 4(1): 18-25.

[7] Situngkir, H. (2007). "An Alternative Postulate to see Melody as 'Language'". *BFI Working Paper Series WPK2007*. Bandung Fe Institute.

[8] Situngkir, H. (2008). "Platform Komputasi untuk Preservasi Budaya Tradisional Secara Partisipatif". *BFI Working Paper Series* WP-XII-2008. Bandung Fe Institute.

[9] Situngkir, H. (2009). "Evolutionary Economics Celebrates Innovation and Creativity-Based Economy". *The Icfai University Journal of Knowledge Management* 7(2):7-17.

[10] Situngkir, H. (2009). "The Phylomemetics of Batik". *BFI Working Paper Series* WP-9-2009. Bandung Fe Institute.

[11] Situngkir, H. (2010). "Exploring Ancient Architectural Designs with Cellular Automata". *BFI Working Paper Series* WP-9-2010. Bandung Fe Institute.

[12] Situngkir, H. & Dahlan, R. M. (2009). *Fisika Batik: Jejak Sains Modern dalam Seni Tradisi Indonesia*. Gramedia Pustaka Utama.

[4] The draft and documents related to proposal for the *Nusantara Cultural Heritage State License* can be accessed online in: `http://budaya-indonesia.org/iaci/NCHSL`