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Classification of issues underlying the development of information policy

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Abstract

This paper analyses issues underlying the development of information policy with the aim to group the issues into six classes: technical and scientific information, library, information and communication technology, social, government information, and economy. Issues underlying the development of information policy need to be grouped to facilitate the analysis of the current information policy situation of any country. Classification is also an approach appropriate for a new field which has not gained academic maturity such as information policy. Additionally, classification is also important to determine the focus of information policy. This paper is based on a literature review in information policy which gathered qualitative data in analysing the issues embracing the development of information policy. Analyses revealed that the information policy group has never changed ever since the earliest research. The only change that takes place is the variety of issues that fits the group.

Keywords

information policy, classification, information source management, information technology and communication, information society

The study of information policy is expanding and has the potential to become a multidiscipline of its own.

Introduction

Research conducted on information technology summated that each country must have its own information policy. Information policy exists since the early 16th century (Browne, 1997a). However, information technology using a modern approach was traced back to the 1960s (Fayen, 2005: 249) and expanded in the early 1970s (Arnold, 2007: 21). Therefore, this relatively new field faces a few problems such as no agreed definition (Browne, 1997a), various issues that form the information policy (Arnold, 2004), and a scheme for the classification of the issue (Browne, 1997a; Duff, 2004).

Definition

A few researchers have defined information technology specifically by focusing on government resource management (Nilsen, 1997; Kamar, 2006), information society (Oladele, 2001; Moore, 2005), information service (Stone, 1996; Oladele, 2001) and information technology and communication (ICT) (Porat, 1977; Cornella, 1998; Xue, 2005). Information policy is a guideline that ensures the achievement of universal information for the development of a particular country (Pajaro and Betancourt, 2007a: 23). Jaeger (2007: 841) asserts that information policy is "... a combination of law, rules and guidelines that determine or control results, management and information usage – that designs the role of information in a community" while Maxwell (2003b: 7) advocates that information policy is a result of social development, politics, law, economy and technology that is

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relevant to the role of information in the community. Information policy has been defined variously as it could not be separated from the political and social context (Rowlands, 1996: 15).

Literature in the field of information policy identified that there are many issues that underlie the development of a policy, especially the national information policy. However, researchers do not unanimously agree in determining what these issues are (Rowlands, 1996: 15). Since Porat's study in 1997, not many related development topologies were observed in regards to determining issues that need to form the information policy (Hernon and McClure, 1987: 261; Hernon and Relyea, 2003: 1307). Even Duff (2004: 74) acquiesces that underlying issues that are supposed to be the basis of the development of information policy have not been determined, especially when there are new issues such as industrial technological information policy and information resource management practices. The difficulty arises due to technology, practices, the policy preparation process, and the characteristics of the information, which in itself is a specialized field (Braman, 2006: 12). In addition to this, information policy is a field that has not reached intellectual maturity (Calanag, 2003: 2). Also, only limited researches have been conducted in this area (Browne, 1997b). Uncertainty pertaining issues that underlie information policy affects researchers' comprehension, perception and attitude to the issue.

Table 1 lists the many and varied issues commonly underlying information policy worldwide which may be identified from the literature.

Until now, no attempt seems to have been made to group these issues into an orderly scheme. Issues that are not standardized and the absence of a clear method are contributory factors to problems in identifying the issues underlying information policy (Rowlands, 1996: 18). Most researchers on information policy have only adapted issues that were already used by their predecessors. For example, Arnold (2007) adapted a list that was done by Porat (1977), while both Deborah (2001) and Maxwell (2003a) adapted Overman and Cahill's list (1990 in Deborah, 2001). Similarly, Henrici (2004) adapted a list from three researchers: Montviloff (1990), Wild (1996) and Roos (1998 in Henrici, 2004), while Rowlands (1996) presented a list of information policy issues based on literatures which can also be deemed as using other researchers' lists. Though Arnold (2007) adapts Porat's list, he factored into his consideration time, place and history, international influence and specific issues surrounding information policy development. Arnold actually included his own interpretation as done by Uhlir (2004). Muir and Oppenheim (2002: 173), in turn, determined information policy issues through agreement between them and the Policy Advisory Group (PGA) of the UK Library Association which serves as the advisory group in relation to national information policy. Porat (1977: 204) creates a list of information policy issues based on the effects of technology on the primary and secondary information sector. The approach used by Porat garnered feedback and widespread criticism. Arnold (2007: 132) admitted that he used the list developed by Porat (1977) and made it the cornerstone of his research in analysing the current situation in South Africa's information technology. On the other hand, Burger (1993), Rowlands (1996) and Duff (2004) were hesitant to recognize Porat's vague list. Duff agreed with the list created by Rowlands (1996) while Browne (1997b) suggested that the findings by Overman and Cahill be made the basis for determining issues that underlie information development policy without taking into consideration the social or political context as was done by Lamberton (1974: 145).

Conflict in determining the issues that underlie information policy development encourages research in clustering the various issues in different classes to make it more comprehensible. Rowlands (1996: 20) considered that classification is too general and does not specify a certain policy. He also finds it vague, especially in the political and social institutions where the policy is developed and executed. However, he agrees that classification is the best approach to explore the design issues that underlie complex information policy.

These researchers consider that classification is the best method as it facilitates understanding of the issues that underlie national information policy. This paper therefore seeks to classify the issues that underlie information policy development.

Classification of information policy issues

Some researchers on information policy are prone to classifying issues that underlie information policy according to certain aspects. For example, Lamberton (1974) classified information policy issues into four groups: scientific and technical information, social science information, service information and needs towards information technology. Chartrand (1989)

Table 1. Issues underlying information policy

access to books
agriculture and commerce industry
application and content
business development, productivity and competitiveness
business secrets law
collection, usage and distribution of data
commerce stamp
Communications Act
computer crime and regulations
consumer information and health
content development of national information
copyright and intellectual property
cost/finances pertaining to execution of information policy
Cyber Law
data transmission beyond boundaries
digital archive
e-commerce
education/training/work
electronic fund transfer
electronic government
filtering
foreign publication acquisition
freedom of speech/communication rights
freedom to develop
global village
government information access
government information resource management
government publication
government secrets/national security
high capacity information storage
human rights
illiteracy rate
industrial property rights
information access cost
information access standard
information and media freedom
information based economy
information content distribution
information data/technical and scientific information
information development process
information exchange/sharing information
information expert and field of occupation
information exposure
information industry including creative industry
information integrity/validity/quality
information issue pertaining public and private sector
information literacy/digital literacy
information obtained at work
information preparation
information security
information selection
information society
information technology industry
information value for economic competition
infrastructure/ICT information superhighway
innovation, RandD and technology transfer
intellectual freedom
international information transmission
IT for education, innovation and competition
laws pertaining to books
legal deposit
library repository
maintaining/storage of information
market information
metadata
national bibliography
national information system/government
network and continuity
north/south divide, digital divide
panel code
Patent Law
piracy
policy pertaining to laws and regulations
price policy
privacy
public centre access
Public Library and National Archive
quality of life
reading campaign
right to assemble
skill in information usage
social contract
standard international information access
statistics and survey information
super computer and scientific network
supervision of technological, communication and multimedia mergers
tax and workers' law
telecommunication broadcasting and satellite projection
theoretical approach to develop information policy
traditional information (heritage, legacy and folklore/traditions, culture)
universal information standard

and Milevski (1986) in turn classified information policy issues into nine groups, namely, government information, technological information, telecommunication and broadcasting information, international information, exposed information, privacy and secrecy, law and criminal computing, intellectual property, library and archive policy and government public information casting. This classification has been deemed redundant because some similar aspects were categorized in different classes (Nilsen, 2000: 38). Rowlands (1996: 22) considers that a reductionist approach is useful as a means to identify the detailed issues that underlie information development.

Information policy issues can be classified under a few categories. For Rowlands (1996: 20) policy classification can be based on the objectives and goals of the development of information society. Hill (1994) had used the same approach, but he collected bibliographies to create his classifications, while Sillince (1994: 224) used an ideological and institutional paradigm. According to Priftis and Oppenheim (1999: 32) information policy is dominated by ICT. For Nilsen (2000: 31), information policy in the ICT era encompasses aspects such as filters, communication (including telecommunication, broadcasting and the information highway), copyright, freedom of speech and information, governmental information, industrial information, literature, privacy and scientific and technical information. This, however is refuted by Kargbo (2007: 323) who views information policy as a field that is under the jurisdiction or scope of library agents in line with the library's role as critical information provider. Libraries must have information policy with the goal to choose, organize and spread information, besides combating problems related to information policy effectiveness. Information policy should also align itself to laws pertaining to telecommunication, copyright, intellectual property and information technology for usage in research and industry.

This paper serves to research information policy issues as a whole without giving specific focus to particular aspects because only then can it provide a complete list of the issues that underlie information policy development, specifically national information policy.

Method

Qualitative design seems to be the choice for researchers in the field of information policy such as Deborah (2001), Arnold (2007), and Ahmad (2008). This design was chosen as being suitable to the needs of the present research, which is exploring issues and classes of information policy which have not been fully developed (Creswell, 2009: 18). Apart from that, the type of data used for this research is not in numerical form (Robson 2002: 550).

The approach used here to identifying issues, listing and classification is that used by Rowlands (1996) and Braman (2006). Clusters in information policy issues and their arrangements are based on frequency of use (Hernon and McClure, 1987, 263). From a technical aspect, data or information acquisition was based on content analysis as conducted by Burger (1988); Powell (1991); Bryman (2001); Silverman (2001); Travers (2001); Wolcott (2001); Patton (2002) and Creswell (2009).

The framework for classification of information policy issues

Even though Lamberton (1974: 147) classified information policy issues into only four categories, this classification was based on research conducted in 1974. Currently, many more issues need to be addressed to provide the basis for information policy development. While Chartrand (1989) and Milevski (1986) classified information policy issues into nine groups, their classification, as noted above, was considered by Nilsen (2000: 38) to be redundant because some similar aspects were categorized in different classes.

Consideration of these and other previous efforts prompted the authors of the present study to classify information policy issues into six groups:

1. Technical and Scientific Information
2. Library
3. Information and communication technology (ICT)
4. Social issues
5. Government information
6. Economy

Technical and scientific information

Among researchers who propagated technical and scientific bases for information policy development are Lamberton (1974); Porat (1977); Brown (1983); Stroetmann and Schwuchow (1992); Hill (1994); Kularatne (1988); Duff (2004); Kamar (2006); Bustamante (2007); Pajaro and Betancourt (2007a) and Ruenwai (2006). However, these researchers did not list or identify the aspects that were classed as technical and scientific information, except for Ruenwai.

He identified these aspects as: united ICT infrastructure, electronic resource acquisition, improvement in services, communication with usage and feedback, education with consumerism, cost, effective usage of resources, electronic library transaction and shared information.

Even though scientific and technical information issues were presented in the 1950s (Eisenbeis, 1989: 297; Schwuchow, 1999: 97), these issues are still popular. Ruenwai's research (2006), which analysed the status of scientific information policy in Thailand, proved that scientific and technical issues continue to garner researchers' attention (Orna, 2008: 549).

Library

Researchers who advocated the library as an issue that should underlie information policy development are Lamberton (1974); Porat (1977); Chartrand (1989); Eisenbeis (1989); Hill (1994); Rowlands (1999); Library Association (2002); Smith (2004); Duff (2004); Arnold (2004); Kamar (2006); Arnold (2007); Bustamante (2007); and Soler (2007).

The 'library' area includes issues such as: book access; collection policy; content distribution; data flow beyond boundaries; information network system; data usage and distribution; digital archive; expert in information and occupation; expert in information usage; foreign publication acquisition; information retention; laws pertaining to books; library repository; national bibliography; preparedness of information; public access; reading campaign; shared information.

'Library' is an important issue cluster which was presented as early as 1974 by Lamberton and remains the crux of the issues that underlie information policy development (Kamar, 2006: 13; Arnold, 2007: 199; Bustamante, 2007: 35). Researchers in the field of library and information science dominated this field (Hill, 1994: 3) while the library continues to be the earliest agent to publish formal documents pertaining to information policy (Oli, 1991: 138; Orna, 2008: 554).

Orna (2008: 550) suggests that national information policy development be coordinated and managed centrally by an advisory community representing the private sector, local government, academicians and professionals in disciplines related to library and information sciences. Orna's recommendation shows clearly that the library component should be included into the unified information policy development policy frame because both are basic components in the dissemination of information to the public (Chartrand, in Burger, 1993: 6; Hill, 1994: 4; Rowlands, 1996: 13; Rowlands, 1999: 60; Library Association, 2002: 13; Duff, 2004: 76; Smith, 2004: 65; Arnold, 2004: 206; Kamar, 2006: 13; Kargbo, 2007: 326; Arnold, 2007: 9; Bustamante, 2007: 35; Pajaro and Betancourt, 2007b: 30).

Information and communication technology (ICT)

Research that focuses on information and communication technology (ICT) as the foundation that underlies information development policy was reported by researchers like Lamberton (1974); Porat (1977); Wesley-Tanaskovic (1985); Chartrand (1989); Montviloff (1990); Hill (1994); Webster (1995); Nilsen (1997); Cornella (1998); Rowlands (1999); James (2001); Arnold (2004); Duff (2004); Henrici (2004); Moore (2005); Bustamante (2007); Pajaro and Betancourt (2007a).

Information policy is synonymous to ICT, alongside other terms such as 'communication and information policy' and 'information society policy' (Beer, 2005: 54). Therefore a few researchers defined information policy as government's action plan in relation to information and technology at national level, especially in terms of collection, storage, analysis, matching and distribution of information (Dae, 1996: 1).

Xue (2005: 239) opines that information policy encompasses the vast ICT area with the Internet as its foundation. This is why Xue connects information policy discussions with the Internet. Meanwhile, even though he does not directly connect information policy with ICT, Porat (1977: 207) defines information policy as one that supervises issues affected by information technology (computers and telecommunications). Cornelia (1998: 1) in turn defines it specifically as a policy that supervises action to encourage and stimulate information exchange.

Eisenbeis (1989) states that the ICT issue as a component in the information policy development was first given attention in the 1980s. Information policy was seen as the catalyst to information technology by referencing the use of technology to distribute information. However, as early as 1974, Lamberton emphasized the importance of preparing an ICT infrastructure or information highway. Developmental issues and computer technology effects such as networks, computer crime, government information systems and traditional information protection and

culture had been debated amongst researchers in information policy in the 1980s in line with the development of computer technology (Hill, 1994: 3).

ICT is given a new perspective when it combines information technology and communication as processor, user and information sender without taking into account time or boundaries (Soler, 2007: 14). This development directly and indirectly became the basis for information democracy (Bustamante, 2007) and helps form a productive community and post-industrial organization, also known as the information society (Arnold, 2004: 200; Soler, 2007: 14).

Social issues

Researches such as those conducted by Wesley-Tanaskovic (1985); Trauth (1986); Burger (1988); Overman and Cahill (1990); Muir and Oppenheim 2002); Maxwell (2003b); Bustamante (2007) and Pajaro and Betancourt (2007b) used social issues as the foundation for information policy development. These researches focused on issues such as: collection rights; data protection, access; freedom of speeech or communication rights; human rights and illiteracy rates.; information exposure; information filter; information literacy or digital literacy; information security; information society, traditional information protection including heritage, folk lore, tradition and culture; intellectual freedom, global village; privacy; quality of life; social contract; workers' taxation and laws.

Wesley-Tanaskovic (1985: 7) and Baark (1985: 21) suggested that national information policy should be seen in a wide context, beyond the socio-cultural and economic realms. Problems pertaining to information policy cannot be solved if only one issue – either social or technological – is focused on, because information policy is socio-technical in character and involves a dynamic relation between man and technology (Maxwell, 2003b: 8). Among those who connected information policy with the social development context are Wesley-Tanaskovic (1985); Trauth (1986); Burger (1988); Overman and Cahill (1990); Muir and Oppenheim (2002); Maxwell (2003b) and Pajaro and Betancourt (2007a). Meanwhile, Cawkell (1982); Stone (1996); Webster (in Browne, 1997b); Oladele (2001); Mashkuri et al. (2002); Arnold (2004); Duff (2004); Moore (2005); Jaeger (2007); Arnold (2007) and Kargbo (2007) specifically identified information policy as a necessity to develop an information society.

The concept of the information society was first introduced in 1983 by Browne, even though Schwuchow (1999: 97) alleged that the concept surfaced in the 1990s. Apart from the information society concept, other issues related to social factors are: degree of education; literacy rates, literacy in information and computer literacy, effect of the community's ability towards accessibility and obtained information usage (Arnold, 2004) and shared information (Daniel, 2000: 2). To support education, preparation for family services and social development, ICT can be used by people from all walks of life (Henrici, 2004: 31). The ability to use ICT is the stimulus to information literacy or digital literacy, that forms the basis for an information society. An information society, in turn, requires laws and regulations to protect intellectual property rights, individual data and rights to accessible formal and other information (Burger, 1993: 6); Rowlands (1996: 14); Moore (2005: 11); and Pajaro and Betancourt (2007a: 20).

Government Information

Among researchers who used the element of government as an issue that underlies the development of information policy are Lamberton (1974); Bushkin and Yurow (1979); Chartrand (1989); Eisenbeis (1989); Montviloff (1990); Hill (1994); Nilsen (1997); Cornella (1998); Rowlands (1999); Smith et al. (2000); Nilsen (2000); Rowlands, Eisenschitz and Bawden (2002); Smith (2004) and Arnold (2007).

The relationship between government and information policy is clear because information is the source used in attaining national information development (Lamberton, 1974) and subsequently information needs to be managed using ICT (Smith et al., 2000). According to Dae (1996: 57); Rowlands (1996: 20) and Orna (2008: 548), public access to government information as the underlying issue in information policy development was debated in the 1960s. Apart from that, other issues related to the conflict between information collection by government, individual privacy protection and national security (Rowlands, 1996: 14; 1999: 60).

Economy

Among researchers who connected information policy with economic development were Trauth (1986); Gray (1988); Hill (1994); Webster (1995); Stone (1996); Library Association (2002); Rowlands, Eisenschitz and Bawden (2002); Maxwell (2003b);

Henrici (2004) and Soler (2007), while scholars who specifically pinned changes in the economic system to an economic system based on information were Bortnick (1985); Stone (1996); Lester and Koehler (2003); Arnold (2004); Martin (2005); Moore (2005); Arnold (2007); Kargbo (2007) and UNESCO (n.d).

Research that hinges on the economy as the underlying issue in information policy development paid attention to: application and content; commerce secrecy law; commerce stamp; copyright; customers information; e-commerce; economic-based information; electronic money transfer; industrial property rights; information and creative industry; information technology industry; information value for economic competitiveness; innovation, research, development and technology transfer; intellectual property rights or rights of information; market information and telecommunications industry; patent law; and piracy.

Information policy is necessary to support the information industry (Porat, 1977: 209); (Rowlands, 1996: 15). Economic development can occur in three economic sectors: tertiary (trade, transport and communication, financial services); secondary (construction, electricity, gas, and water) and primary (agriculture and mining). National information policy prepares a frame to determine priority towards resource allocation amongst user groups and different sectors (Henrici, 2004: 31).

Conclusion

Even though Burger (1993); Browne (1997a; 1997b) and Rowlands (1999) alleged that information policy is closely related to information science, the writers opine that information policy is a unique field of research because it is preferred by researchers in various fields such as development policy, science and technology, economy, management and law, sociology and telecommunications, in line with Burger (1993). Differences in background did not limit debates and acceptance of issues presented by researchers from different disciplines. For example, Arnold (2007), who is an information scientist, accepted and used the issue presented by Porat (1977), who is an economist, to analyse the status of information policy. Apart from that, an information policy issue such as privacy was presented by researchers from various disciplines such as information science, by Muir and Oppenheim (2002), in the economic field, like Porat (1977), and in the social field, like Pajaro and Betancourt (2007a). The variety shows that the study of information policy is expanding and has the potential to become a multidiscipline of its own.

Issue that underlies information policy did not undergo any changes according to specific years, as alleged by Eisenbeis (1989); Hill (1994), and Schwuchow (1999). Schwuchow, for example, alleged that information policy changed from solving scientific and technical information issues in the 1950s to the early 1970s to the issue of electronic information service in the beginning of the 1970s and the early 1990s. Then the focus on information policy changed to solving information society issues in the early 1990s. The element of library has continued to be debated from 1974 until now (Kamar, 2006); (Arnold, 2007); (Bustamante, 2007) and (Soler, 2007).

The main cluster in information policy did not change but its related issues underwent changes and caused new issues to surface. For example, in the social context, the need for information policy to be connected with social development was presented by Wesley-Tanaskovic in 1985. Among other researchers who connected information policy to social development were Trauth (1986: 43); Burger (1988); Overman and Cahill (1990); Muir and Oppenheim (2002); Maxwell (2003b); Aballi (2007); Soler (2007). Meanwhile, Cawkell (1982); Stone (1996); Webster (in Browne 1997b); Oladele (2001); Mashkuri et al. (2002); Arnold (2004); Duff (2004); Moore (2005); Jaeger (2007); and Arnold (2007). Kargbo (2007) specifically connected information policy with the development of an informed society.

This study classified 91 issues that should be made the basis for information development policy into six clusters. However, these classes are still open for debate because there are no definitive guidelines that could be followed.

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