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The next stage of U.S. communications policy: The emerging embedded infosphere

Richard D. Taylor[a,b,*]

[a] University of Hawai'i-Mānoa, 331 Crawford Hall, Honolulu, HI 96822-2217, USA
[b] Penn State University, Telecommunications Studies and Law Emeritus, USA

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ABSTRACT

The United States needs to reimagine the basic principles of its telecommunications and information policy to fit an emerging society in which networking and intelligence are embedded into an increasing number of everyday things which constantly monitor and measure our lives. This emerging environment is an always-on, ubiquitous, integrated system comprised of the Internet of Things, Big Data, Artificial Intelligence/Intelligent Systems and the Intercloud, which act together as a single system, referred to here as the "Embedded Infosphere" (EI). This development is driving the latest stage – the third – in the evolution of U.S. communications policy.

Each of the components of the EI presents unique challenges, but the greater concern is all of them acting in concert. These developments bring into focus many topics that have been outside the traditional communications policy envelope, and exceed the portfolios of existing agencies and institutions. This article envisions a new "EI policy space," grounded in established societal values, and built on the experience of the previous stages.

There are appropriate policy responses to each of the challenges, but these responses need to be seen in a holistic perspective, as they are all interconnected. Many of the issues such as privacy, security, consumer protection, and data stewardship are common across several elements. The larger goal is to establish a framework for an integrated policy structure which can address unpredictable emergent conditions, while allowing markets to flourish without unduly burdensome regulations, restrictions or uncertainties.

This articles suggests a high-level analytical framework of criteria against which proposed EI policies can be measured. While there may be no "perfect" policies, some may be better (or worse) than others. It also offers a political process designed to incorporate the concept of the EI into national policy thinking. This approach should be implemented through a series of steps and should provide flexibility for development. The initial step is a process by which the EI can be acknowledged, its development analyzed, and the national interests institutionalized. The U.S. Senate has already initiated this process with the pending "DIGIT" Act, designed to bring together the core federal stakeholders and open a policy discourse which will be expanded over time to other key stakeholders. This should lead to the development of a national EI strategy.

Since the EI is progressively global, the article suggests how both the normative and regulatory dimensions can be approached in the global context. It raises the possibility of a

* Correspondence address: University of Hawai'i-Mānoa, 331 Crawford Hall, Honolulu, HI 96822-2217, USA.
E-mail address: rdtaylor@hawaii.edu.

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restructured ICANN "Empowered Community" as a possible venue for developing policies and recommendations in this area. It notes that since global unanimity is unlikely, non-governmental regimes will likely develop to address the unresolved policy interstices.

"*The wheel is an extension of the foot; the book is an extension of the eye; clothing, an extension of the skin, electric circuity, an extension of the central nervous system.*"

McLuhan & Fiore, The Medium is the Massage (1967).

1. The challenge

New communications and information technologies and new ways of using them are surpassing the capacity of traditional models for thinking about them as subjects of policy. As the Internet "disappears" (Smith, 2015; Szalai, 2015) and "chips" are built into everyday objects which become our new interfaces with the network (Kaku, 2013; RCR 2012), it is clear an updated framing of policy is needed.

Everyday things are being activated, connected, cognitized and engaged in a global network where their data is saved in "clouds," processed by the sophisticated algorithms of "big data," interpreted and transformed by intelligent systems (AI/IS), and applied by private enterprises and public authorities for ends both known and unknown. Collectively this process is referred to here as the "Embedded Infosphere" ("EI"). The challenge is to find a new way to shape the information policy discourse to adapt to it.

In thinking about the information policy framework, as implemented through a range of regulatory (or de-regulatory) choices, it is useful to speak not about a 'policy' but about the "policy space". Otherwise, there is a risk that the basket of policy alternatives and tools is conceived too narrowly. The concept of a "policy space" recognizes that oversight power and regulatory authority will not be held within a single formal body, but may be dispersed – or shared – between any number of entities, both private and public, within the relevant space. In this way, it minimizes the problem of setting public and private interests in opposition.

The policy space approach allows for a more complex mix of regulatory activity which may be especially relevant in the emerging Embedded Infosphere. It can accommodate a variety of tools from the promotion of competition in the market, to deregulation, to self-regulation, through to a "light touch" or to centralized utility-type regulation. It enables different jurisdictional responses based on similar policy objectives. (Hitchens, 2011).

The policy space concept also avoids the idea of the market or the discipline of the market as being non-regulation or beyond regulation. It sees the market as simply another policy choice or instrument within the space, which can be used when it is appropriate. This also avoids seeing regulation as a departure from the norm, namely, the market, or as a second-best fall back in the event of "market failure". (Hitchens, 2011).

In the case of communications and information policy, new and convergent technologies involve many new areas, and old ones in new ways. The concept of a "policy space" is a much broader approach than traditional "regulation". The information policy space emphasizes a broad technological and social landscape in which activities occur and interests contest.

2. Three stages of U.S. communications/information policy

There seems to be a scholarly impulse to classify human history into "Eras" and "Ages" and "Societies", etc. Some of those divisions endure, while others fall away with time. But the efforts are not wasted. They help us to focus on and understand the process of social change. For example, it is said that western civilization has moved from an Agricultural to an Industrial to an Information Society. These are not tidy breaks; there are no specific dates on the calendar when one became the next. Nor do they have well-defined boundaries. The borders overlap, flow and mix. (Dourish & Bell, 2011) But many have found them useful. Such categories can be interpreted in various ways, or rejected entirely, e.g., a critique that they are just different ways of looking at similar unjust economic structures – nothing important has ever changed (Fuchs, 2012).

So it is with an effort to identify and assert "stages" of communications and information policy. It is untidy work. Time itself flows seamlessly. Can we then make out in that flow particular periods when quantitative changes appear to become qualitative, or at least sufficiently so as to be able to say that the future in that field ceased to look like the past? Such an effort must be approached with humility, and the understanding that cuts are being made not with a scalpel but with some rougher tool. But at this point in the evolution of communications and information policy, it is clear that the future does not look like the past. This article is written to propose some divisions that seem defensible, sufficiently independent, and analytically useful. It is advanced here that there are three such stages:

1. "Classic" communications policy
2. Internet/Broadband Ecosystem policy
3. Embedded Infosphere (EI) policy

This article will not dwell at length on the first two, other than to sufficiently identify them, as they are well covered elsewhere.