GOVERNANCE IN NAMESPACES

A THESIS

SUBMITTED TO THE

STANFORD PROGRAM IN INTERNATIONAL LEGAL STUDIES

AT THE STANFORD LAW SCHOOL,

STANFORD UNIVERSITY,

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF THE SCIENCE OF LAW

By

Stefan Bechtold

May 2002

The assignment of numbers is also handled by Jon. If you are developing a protocol or application that will require the use of a link, socket, port, protocol, or network number please contact Jon to receive a number assignment.

RFC 776 (1981)

Anyone can assign names. We each do that all the time.

Ellison & Schneier, 16 (1) Computer Security Journal 1, 2 (2000)

eBay reserves the right to modify, alter or suspend any User ID at any time (at our sole discretion and without notice) for any reason whatsoever.

eBay FAQ at http://pages.ebay.com/help/basics/f-faq-UserId.html#9

Abstract

Since the creation of the Internet Corporation for Assigned Names and Numbers (ICANN), the regulation of the Domain Name System (DNS) has become a central topic in Internet law and policy discussions. ICANN's critics argue that ICANN uses its technical control over the DNS as leverage for policy and legal control over the DNS itself and over activities that depend on the DNS.

The ability to use technical control for policy and legal purposes is not a unique feature of the DNS. Rather, it can be observed in other namespaces as well. Namespaces are especially important in distributed computer systems such as networks. In a distributed system, namespaces can be used to identify four different kinds of resources: computers (or more generally: devices), users, files, and applications (or more generally: services). Examples of device namespaces include DNS, ENUM, IP and Ethernet addresses. Microsoft Passport is an example of a user namespace, while certain Peer-to-Peer systems provide file namespaces. Finally, TCP/UDP port numbers and UDDI are examples of service namespaces.

This paper analyzes namespaces in each of these categories and derives some common dimensions of the governance of namespaces. In particular, the paper shows how design choices at the technical level of a namespace directly or indirectly influence its policy and legal implications. It matters, for example, whether a namespace is merely controlled by technological means or also supported by contractual protection. It also matters whether namespaces are controlled by private or public entities, what their topology is, and what the intensity and scope of namespace governance is. All these dimensions influence how namespaces protect values, how they allocate knowledge, control, and responsibility, and how they interact among each other. Designing namespaces therefore should not only take technical considerations, but also legal and policy considerations into account.

Table of Contents

List of Figures