ITU - Telecommunication Standardization Sector **Information Document 13-E**

STUDY GROUP **2**

April 2002

QUESTION(S): 1/2

SOURCE: * DIRECTOR, TSB

TITLE: ITU-T AND ICANN REFORM

Note:

The purpose of this document is to respond to ICANN's request for public comments on its reform process.

ITU-T and ICANN Reform

By Houlin Zhao, Director, TSB, ITU, 17 April 2002

Personal comments. Not an ITU agreed position.

1. Summary

The Internet Corporation for Assigned Names and Numbers (ICANN)[1] performs a number of tasks critical for the good functioning of the Internet. Recently, ICANN's President has stated that ICANN is not able to perform its mission, primarily because it requires greater government support. As a consequence, ICANN's President has called for reform, and ICANN has invited comments on reform proposals.

The International Telecommunication Union Telecommunication Standardization Sector (ITU-T)[2] has a long and successful history of performing, as a government-industry partnership, functions which are similar to those performed by ICANN. It has worked closely with ICANN in recent years. For these reasons, it appears that ITU can contribute to the ICANN reform process.

There appear to be misperceptions concerning ITU-T's role and function. ITU-T has its own mission, procedures and methods to accomplish the tasks entrusted to it. IUT-T's membership consists of both governments and industry. Private sector members play a considerable role in ITU-T. ITU-T's main role is to provide a forum for discussion, coordination, and consensus-building between its members, including governments and industry. Government participation and coordination do not amount to government control. A good example is the international telephone numbering scheme, which is coordinated by ITU-T and is universally considered to work to the satisfaction of the general public; however, telephone services are not controlled by ITU-T.

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[1] http://www.icann.org

[2] http://www.itu.int/ITU-T/

The general public can participate in ITU-T's work through user groups, indeed several such groups already are ITU-T sector members. There is no reason why such user groups could not be reinforced and evolve to provide "at-large" representation, if ICANN has difficulty in providing that type of representation.

Thus, it appears that ITU could increase its cooperation with ICANN in order to help ICANN to overcome some of its current difficulties.

2. ICANN's situation

ICANN is a not-for-profit corporation established under the laws of the State of California, in the United States of America (USA). It operates under the framework of a Memorandum of Understanding (MoU) with the US Department of Commerce[3]. ICANN currently performs a number of critical tasks related to the management and operation of IP-based networks. In particular, ICANN makes recommendations to the US Department of Commerce regarding the creation of top-level domain names (such as ".com", ".ch"), and the delegation of actual operations for any particular top-level domain to any particular operating entity (for example, ".com" is delegated to Verisign, Inc.)[4]. The tasks performed by ICANN are widely acknowledged to be critical for the good functioning of IP-based networks and IP-based services (which include the networks often referred to as "the Internet").

ICANN's operating budget[5] for 2001-2002 is approximately US $5 million for a staff of 21 full-time equivalents.

Since its creation, ICANN has, in addition to performing day-to-day administrative and operational functions: introduced competition to domain name registrations; implemented an administrative dispute resolution process for conflicts between trademark owners and domain name owners; created several new top-level domain names; initiated the process of moving world-wide Internet administration and operations to a more formal regime; and started to explore ways to provide representation for concerned individuals (the so-called "at large" representation). These are significant changes with respect to the past; as is common for changes, they have been accompanied by a certain amount of controversy.

There has long been discussion of the implications of the increasing international character of IP-based networks, and the increasing importance to national economies of IP-based services, particularly with respect to the fact that ICANN is a California company supervised by the government of the USA. Some have argued that this legal form and a lack of formal control by other governments could lead to problems.

Indeed, the Internet today is widely viewed as an important, or even critical, national telecommunications infrastructure in many countries. Its role today is very different from that of the military/academic network that was the precursor of today's Internet. Governance mechanisms based on models that were valid over 20 years ago, when the Internet was in its infancy, are not likely to serve the needs of today's Internet. Some believe that the Internet today is in many ways similar to any other international telecommunications infrastructure or network.

Some of these concerns have now been echoed by Mr. Stuart Lynn, President of ICANN. In February 2002, Mr. Lynn, published an extensive report and detailed proposal entitled "President's Report: ICANN – The Case for Reform"[6] in which he stated: "the original concept of a purely

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[3] http://www.ntia.doc.gov/ntiahome/domainname/icann-memorandum.htm

[4] For more details of ICANN's mission, see ICANN Staff, Toward a Statement of the ICANN Mission, 10 March 2002, http://www.icann.org/general/toward-mission-statement-07mar02.htm

[5] http://www.icann.org/financials/

[6] http://www.icann.org/general/lynn-reform-proposal-24feb02.htm

private sector body, based on consensus and consent, has been shown to be impractical" and "experience has shown that the influence, authority, and close cooperation of governments is essential to accomplish ICANN's mission". Mr. Lynn goes on to state that ICANN's current mechanisms for consulting governments are not adequate.

According to Mr. Lynn:

1. ICANN as currently constituted is not able to fulfill its mission, largely because of inadequate government support and inadequate funding;
2. much greater, and more formal, involvement by governments is required if ICANN is to fulfill its mission;
3. ICANN's budget should be in the order of US $25 million per year, and governments should provide part of that budget.

According to Mr. Lynn, there has been a revenue shortfall of about US $0.5 million each year, which has been covered by not hiring up to authorized levels, leading to understaffing. Furthermore, according to Mr. Lynn, ICANN currently has inadequate backup for key individuals. As a result, Mr. Lynn states that funding should be increased by a factor of 3 to 5.

Among other specific problems identified by Mr. Lynn, we highlight:

4. ICANN has been too slow to address and resolve issues;
5. ICANN lacks clear, stable, and accepted processes and procedures for guiding its work;
6. ICANN has not yet created the industry-government partnership it needs to fulfill its mission.

A more detailed account of Mr. Lynn's descriptions of ICANN's shortcomings is contained in Annex B of this paper.

As a consequence, Mr. Lynn has proposed a reform of ICANN. Mr Lynn states that a reformed ICANN would be a better alternative for Internet governance than an intergovernmental organization such as ITU. The reforms envisaged are, essentially, to have government nomination of 1/3 of the ICANN board, and to obtain government funding.

Various comments and counter-proposals have also been made[7]. ICANN management has invited public comment and this paper is presented in response to that invitation[8]. **The purpose of this paper is to propose an exploration of the ways in which the ITU-T could assist ICANN in performing its tasks**, tasks which are widely acknowledged to be critical for the good functioning of the Internet. A summary of ICANN's core values and main functions has been given by Mr. Lynn as is reproduced in Annex C of this paper. A detailed list of ICANN's functions has been given by ICANN staff (cited above) and is reproduced in Annex D of this paper.

[7] See the ICANN web site http://forum.icann.org/reform/ for many public comments. Note in particular a detailed counter-proposal made by New.net (which contains many references to other comments), available at http://www.new.net/WhitePaper_v2.html and a quite different counter-proposal made by Danny Younger, Chair of the General Assembly of ICANN's Domain Name Supporting Organization (DNSO), which includes at the beginning a history of ICANN's creation. Mr. Younger's counter-proposal is available at: http://www.icannworld.org/ . Yet another detailed counter-proposal, and a set of links to several comments and counter-proposals, is available at: http://www.byte.org/heathrow/ .The ITU takes no position with respect to any of the cited comments or counter-proposals.

[8] See http://www.icann.org/announcements/announcement-27mar02.htm

3. ITU's position

In response to requests by its members, ITU already cooperates with ICANN in several ways. ITU is a founding member of ICANN's Protocol Support Organization (PSO)[9], a technical advisory body. ITU is a member of ICANN's Government Advisory Council (GAC)[10]. An expert proposed by ITU-T sits on the ICANN Board, and the Director of TSB is a member of an ICANN independent review panel nominating committee.

As IP-based networks and IP-based services have become more and more widely used to provide services similar to those of traditional telecommunications networks, ITU-T has increased its involvement with the new technologies. Indeed, the use of the new technologies within (or as a replacement for) traditional telecommunications networks has given rise to a number of integration issues, issues which have been discussed within ITU-T and in liaison with the Internet Engineering Task Force (IETF)[11]. Two joint meetings of IETF Area Directors and ITU-T Study Group Chairmen have been held. There are a number of areas in which ITU-T and IETF have cooperated successfully, on the basis of mutually agreed cooperation guidelines[12]. Among these, we cite the ITU-T Recommendations H.248, H.323, X.509, and the work on ENUM[13].

The ITU-T performs world-wide administration, and acts as the forum for policy management, of a number of naming and address allocation systems that are essential for the good functioning of critical infrastructures, including the physical-layer infrastructure of the Internet itself. We cite here only such well-known examples as the E.164 numbering resource and the E.212 mobile numbering resource.

It is widely acknowledged that the ITU-T performs its tasks to the general satisfaction of industry, governments, and the public at large, using processes that are open, transparent, and ensure accountability to all stakeholders.

The presence in ITU-T of developing country governments broadens participation to people in those countries who would not otherwise have been represented. Thanks to the maturity of the processes and procedures, there are sufficient checks and balances in place to ensure that vested interests cannot misuse ITU processes for their particular interests.

ITU-T, as an intergovernmental organization, enjoys sovereign immunity and thus does not require liability insurance or extensive legal advice concerning liability issues. Furthermore, ITU-T is responsible to all of its members jointly and severally, unlike private-sector organizations which, depending on the laws of their legal jurisdiction, may have a well-defined ultimate authority within the organization which has ultimate responsibility and liability for all acts of the organization (for example, the current ICANN Board of Directors is ultimately responsible for all acts, or failures to act, of ICANN; the general membership of ICANN is not responsible or liable).

Both government and industry membership of ITU-T, and both government and industry participation in ITU-T technical and governing bodies, are allowed under the existing ITU Constitution and Convention, and have been in place for many years, with satisfactory results.

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[9] http://www.pso.icann.org/

[10] http://www.noie.gov.au/projects/international/DNS/gac/index.htm

[11] http://www.ietf.org. For a matrix showing the fields of common interest between IETF and ITU-T, see http://www.itu.int/ITU-T/studygroups/com13/ip/ietf-wg.html .

[12] http://www.itu.int/itudoc/itu-t/com2/infodocs/006.html

[13] http://www.itu.int/ITU-T/worksem/enum/index.html

No changes in ITU's Convention or Constitution would necessarily be required if ITU-T were to cooperate more closely with ICANN[14]. On the contrary, new Questions could be created within existing Study Groups, or new Study Groups could be created, if required.

It is clear that increased participation from Internet Procotol (IP) experts would be highly desirable if ITU-T were to become more involved in IP-based network issues. While many IP-based network experts already participate in ITU-T work, additional participation would be encouraged if ITU-T increases its activities in this area. In particular, participation from experts in specific topics would be sought as required.

In summary, ITU-T is an effective public-private partnership, rooted in the public sector but with the active backing and participation of industry players. Currently there are 450 industry members. In the ITU-T industry and governments work together, to achieve common goals for the public benefit. **And ITU is unique in being a partnership between governments and industry for information and communication technologies (ICT).**

3.1 Core values

ITU-T has a long, well known, and well respected tradition for open and participatory decision making. ITU-T processes are well defined, well known, stable, and undergo continual financial and functional review. Governments are well used to the ITU-T processes and procedures and know how to work within them. All of the world's 189 governments can participate in the ITU-T's work as can any interested private company. The ITU's funding comes from country contributions, but also from membership fees of private companies. This means that funding has a very broad, international, and multi-sectorial base.

Certainly the ITU-T is ideally placed (with a membership of 189 countries and over 450 private companies) to obtain the views of a wide cross section of member states and the several constituencies within the individual states (for example, individual consumers, operators, service providers, manufacturers, etc.). It is worth stressing that developing and less-developed countries participate in the work of ITU-T, thus ensuring representation of the interests of people living in the lesser developed parts of the world.

ITU-T is a proven and effective public-private partnership, rooted in the public sector but with the active backing and participation of industry players. Indeed, for quite some time, industry members have played a major role in ITU-T, and have significant power to progress items of interest to them. For example, 13 out of 14 Study Group Chairmen are currently experts from industry members. In the ITU industry and governments work together, to achieve common goals for the public benefit. And this at all layers of the telecommunications "stack", from physical infrastructure to higher-level protocols, and for issues related to the allocation of resources such as telephone numbers and issues related to network management and quality of service.

The ITU-T uses processes that are open, transparent, and ensure accountability to all stakeholders. Indeed ITU-T working procedures ensure that all ITU members can have access to written records of proposals, discussions, and decisions. ITU also provides free online access to its products, and ITU-T has created various online areas open for public access. Formal procedures are used to ensure that all members are aware of forthcoming decisions and can provide informed inputs to the decision-making process. Thanks to the maturity of its processes and procedures, there are sufficient checks and balances in place to ensure that vested interests cannot misuse ITU processes for their particular interests.

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[14] Indeed, Article 1, paragraph 1(a) of the ITU Constitution states that the purposes of the ITU are "to maintan and extend international cooperation among all its Member States for the improvement and rational use of telecommunications of all kinds". And telecommunication is defined at 1012 in the Annex to the Constitution as "Any transmittion, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems". See http://www.itu.int/aboutitu/Basic_Text_ITU-e.pdf

Thus, ITU-T is an excellent forum for discussing issues that are of concern to both the general public and key industry players. The social, economic, and technical implications of various alternatives are openly discussed and weighed. **Consensus solutions developed within ITU-T tend to have world-wide support from both industry and bodies whose role is to protect the public interest.** There is not, at the present time, any other body which has a successful record of approaching and solving issues of the type under discussion. Today's ITU-T is a dynamic and flexible organization, which has good relations with other standards-making bodies[15] and industry forums[16]; in particular, public consultation areas have been created as appropriate[17].

User groups can represent the general public in ITU-T by becoming sector members. "At large" representation, that is increased participation by the general public, could be achieved by such "at large" bodies participating in ITU-T's work as sector members, if ICANN has difficulty in accommodating this type of representation within its structures.

It is hard to see why the existing ITU-T environment, in cooperation with ICANN, would not serve the Internet naming and address allocation systems as well as they serve the existing naming and address allocation systems. Indeed, it would appear appropriate if ITU-T could explore new ways, in addition to the current arrangements and cooperation with ICANN, for the benefit of ICANN, to tackle new challenges in cooperation with ICANN.

3.2 Misperceptions regarding ITU-T

There is a lingering negative perception of ITU-T's past. The main reasons advanced three years ago against ITU involvement in Internet issues were:

1. An ITU process would be too slow.
2. An ITU process might violate the national interests of the USA.
3. An ITU process might violate the commercial interests of certain key players.

As Mr Lynn has conclusively argued, the situation today is:

4. ICANN has been far too slow. Any efforts to speed up ICANN processes require a fundamental reorganization of ICANN. This reform effort will itself take considerable time.
5. The ICANN process has, at a minimum, failed to protect the national interests of several countries.
6. The ICANN process has been unduly influenced by certain commercial interests, to the detriment of the commercial interests of other players.

ITU-T's situation today is very different from what it was three years ago. ITU-T's working methods have been streamlined, decision-making is faster, and online tools are used intensively. Membership has increased, in particular among industry members, which indicates that ITU-T is one of the most attractive forums for companies active in the information and communications technology (ICT) sector.

The ITU-T has a proven track record of efficiently and effectively performing, for non-Internet network technologies, functions that are very similar to ICANN's key functions[18], which are "administrative and policy management of the Internet's naming and address allocation systems",

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[15] http://www.itu.int/ITU-T/tsb-director/index.html

[16] http://www.itu.int/ITU-T/forums/index.html and also http://www.itu.int/ITU-T/tsb-director/forum/index.html

[17] For example, http://www.itu.int/ITU-T/dbase/index.html . http://www.itu.int/ITU-T/inr/index.html , http://www.itu.int/itudoc/itu-t/com2/infodocs/index.html , http://www.itu.int/ITU-T/asn1/database/index.html

[18] ICANN Staff, Toward a Statement of the ICANN Mission, 10 March 2002, http://www.icann.org/general/toward-mission-statement-07mar02.htm

and of performing those functions in accordance with the desired core values, which are "openness and broad participation." There is not, at the present time, any other body with an analagous proven track record of performing such functions collectively for both industry and government.

ITU is sensitive to issues of national sovereignty, including that of the USA, and it can be envisaged that any future involvement of ITU-T would be fully consistent with the national sovereignty of all Member States. As members of the US Congress have stated:

> "Finally, we want to strongly reiterate our support for continued Department of Commerce control over the so-called "A-root" server. We believe that any assumption of control over that asset by any outside entity would be contrary to the economic and national security interests of the United States."[19]

Other nations may at some time express similar views. Thus the challenge today is to find ways in which the national interests of all countries can be preserved.

It is often stated that if the ITU-T were involved in Internet governance, then the Internet would be "regulated" by an international organization. This concern arises out of a misunderstanding of the true nature of ITU-T's activities. The ITU-T produces Recommendations which are developed in a bottom-up process, on the basis of consensus among industry and governments. International coordination of technical issues is not international regulation. Government participation and coordination do not amount to government control. A good example is the international telephone numbering scheme, which is coordinated by ITU-T and is universally considered to work to the satisfaction of the general public; however, telephone services are not controlled by ITU-T.

4. Proposals

In our opinion, it would not be easy either to replace ICANN with some other organization, or for ICANN to establish quickly the reporting and financial links with governments that Mr. Lynn has called for. Thus, we propose that ITU could provide support for ICANN and help it to overcome its current difficulties.

The ICANN Committee on Evolution and Reform, which will evaluate public comments, has requested that comments address certain specific issues. The summary of this paper's comments on those issues is:

1. *What is or should be ICANN's misson?* This question cannot be answered authoritatively at this time. ICANN's mission should take into account the competencies of existing organizations such as IETF and ITU-T.
2. *Are the issues raised in Stuart Lynn's report a correct perception of the problems facing ICANN?* Yes.
3. *Are the specific suggested reforms set forth in that report appropriate, and likely to be workable and effective?* As developed below, more extensive cooperation between ICANN and ITU-T could be a more appropriate way of implementing reforms required to achieve the desired goals.
4. *Assuming you believe that structural and procedural reforms are necessary to ensure that ICANN carries out its mission, what transition mechanisms or approaches should be sued to migrate from the status quo to the future environment?* Migration approaches cannot be discussed until agreement is reached on the future role and structure of ICANN and its relations with other concerned bodies such as the Internet Engineering Task Force (IETF) and ITU-T.

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[19] Letter from the Hon. Dingell, Markey, Shimkus, Tauzin, and Upton, Representatives in the US Congress, to Hon. Evans, Secretary, US Department of Commerce, 13 March 2002, see http://www.icannwatch.com/article.php?sid=610&mode=thread&order=0 .

ITU-T can assist ICANN to ensure world wide representation of both the public and the private sectors directly and indirectly related to Internet names, numbers, and addresses by:

1. Assisting ICANN by taking care of issues of concern to governments, in particular to ensure that the sovereign rights and national interests of all Member States are served, including private sector interests as appropriate.
2. Participating as appropriate in policy councils, the Technical Advisory Committee, and the Government Advisory Committee, if such bodies are created in a reformed ICANN (in particular, a special role for ITU-T in any future Government Advisory Committee could be envisaged, in that ITU-T could represent those countries not participating directly);
3. Working with ICANN to identify areas where certain functions could be performed in cooperation, for example:
   3.1. ccTLD issues;
   3.2. "arpa" domain issues;
   3.3. "int" domain issues;
   3.4. developing and administering global address policies for IP address and AS number allocation;
4. Working with ICANN to define an internationally agreed restatement and description of the boundaries for ICANN's policymaking mission, taking into account the specialized skills of existing organizations such as ITU.
5. We invite further discussions with ICANN on these and other issues of common interest.

Further cooperation between ITU-T and ICANN would allow all the different communities around the world that use, provide, operate, and design the Internet to address efficiently and effectively, in a constructive and productive manner, the various issues which have to date proven difficult to resolve within ICANN's existing structure.

Annex A attempts to give one particular view of how ITU-T working methods could be applied to serve all stakeholders concerned with Internet naming and address allocation issues.

The marginal cost for ITU-T, in cooperation with ICANN, to administer, and to act as the forum for policy management, for additional naming and address allocation systems is not great, at least not in terms of the direct costs for the secretariat staff.

The benefits of increased cooperation between ICANN and ITU-T would be that ICANN could rely on ITU-T for government support, at no additional cost to ICANN, or to ITU, or to governments, for what concerns the cost of additional government support for ICANN. Some of the cost increases proposed by Mr. Lynn are not related to increased government support and those cost increases, if approved, would have to be funded by other methods.

It should be clear that ITU does not propose to take over ICANN's functions. Nor is it proposed that the ITU should become involved in all of ICANN's activities. The main areas for cooperation between ITU-T and ICANN have been outlined above, and are discussed in slightly more detail below.

4.1 Administration and policy management of naming and address allocation systems

ITU-T could assist ICANN in restating and describing, in appropriate detail, the boundaries for ICANN's policymaking mission, which at present appears to be insufficiently clear. Indeed, as the ICANN staff has stated:

> [The principles governing ICANNs policymaking mission] are necessarily somewhat general, which has led to some confusion and disagreement about the exact boundaries of

> ICANN's policymaking mission. This has led some to suggest that those boundaries should be restated and described in as much detail as is feasible, taking into account the necessary flexibility required to effectively deal with the rapidly changing nature of the Internet. Such an effort, to the extent it produced useful guidance both for ICANN and the Internet community as a whole, would undoubtedly be a helpful contribution to the current ICANN reform discussions.

ITU-T could assist in the development of the requested restatement, and consideration could be given to developing an ITU-T Recommendation with that goal.

ICANN staff has also stated:

> ICANN is responsible for developing global address policies for IP address and AS number allocation.

This is the sort of function that has been traditionally performed by ITU-T, indeed it is one of the oldest, most stable, and well recognized functions of the ITU-T. It would appear that cooperation between ICANN and ITU-T in this area might be worth considering.

4.2 ccTLD issues

While there are many ITU Member States who either are or have "ccTLD" managers under what they consider to be an appropriate level of control, there are other Member States who are not satisfied with their level of control of their "ccTLD" manager. It appears that many of the smaller countries have had an ongoing uphill struggle to get ICANN to sort out various issues which have arisen in relation to the management of their ccTLD. It is thought that the threat of law suits in a US jurisdiction may have discouraged efforts to take some positive action.

A concerted effort involving ITU-T members and current ccTLD managers would appear appropriate at this time.

As a starting point, ITU-T could cooperate with ICANN to develop a set of procedures and practices that would be followed voluntarily by all ccTLD operators, and which would recognize and reconcile the existing realities, the role of private sector operators, and the role of governments. ITU Member States could assist in this process by encouraging their respective ccTLD operators to participate in the work of defining the procedures and practices.

4.3 "arpa" domain name issues

The fact that the "arpa" domain is perceived to be controlled by US entities (whether ICANN through IANA or IAB through ISOC) has created some very serious concerns regarding the implementation of the ENUM protocol.

Such concerns could be mitigated if it were to be accepted formally that ITU-T should play some role, to be discussed and agreed, in the formal control of the "arpa" domain and its sub-domains, in particular "e164". That is, some consideration could be given to the development of some form of formal assurances that the concerned entities would not unilaterally take steps considered to be inconsistent with sovereign national rights.

4.4 "int" domain name issues

ICANN currently administers the “int” domain. Since that domain name is reserved for intergovernmental treaty organizations, ITU-T could assist ICANN by developing internationally agreed principles and procedures for the administration of the “int” domain.

Annex A: A Possible Application of ITU-T Methods

Sections 1 through 4 below are presented for information only. ITU takes no position with respect to this material.

A respected senior member of the Internet technical community, Harald Alvestrand, has analyzed ICANN's functions[20] Section 1 through 4 below are based on that analysis, but have been edited and may not reflect the intention of the original author. Subsequent sections are not based on the cited analysis.

1. What ICANN was designed to do

ICANN, as designed, was supposed to carry out a few tasks:

1. Maintain the content of the "root zone file", including
   1.1. which root servers exist;
   1.2. which top level domains exist;
   1.3. which name servers serve those top level domains.
2. Hand out address space (IPv4 and IPv6) in a responsible manner to RIRs.
3. Perform book-keeping functions on other number assignments.

The clerical part of these functions can occupy a full-time person. Making sure the information about those changes and modifications are visible to the world at large through a web service can occupy another.

The rest of ICANN is concerned with one matter only: **who gives those two people their instructions?**

2. What ICANN was designed to prevent

ICANN was also created in order to make sure that certain disastrous scenarios did not happen. They deserve mention:

1. Fragmentation of the root. The splitting of the Internet into large chunks with incompatible namespaces (such as with/without .com or with/without .eu), each with sizable followings.
2. Technically infeasible change policies (such as "a million new TLDs").
3. Highly harmful business practices.
4. The loss of significant Internet functionality because of inattention (for example, what would happen if a root server were to be corrupted in a major way).

Again, these are a matter of looking at who gives instructions - but the instructions may have to be given to people outside ICANN's direct control - someone apart from the 2 people mentioned above.

3. Other things that ICANN might as well do .... ?

Note from the ITU point of view (this note is not found in Harald Alvestrand's original text): almost all of the items listed in this section 3 would be viewed as national matters, outside the scope of any international organization.

A number of things concerning the DNS also cry out for some "serious management":

1. Solving conflicts over ownership of names, including

[20] Personal views of Harald Alvestrand, IETF Chair, available at: http://www.alvestrand.no/icann/icann_reform.html .

1.1. curbing domain name pirates;

1.2. enforcing uniform and fair dispute resolution policies for domain names within certain domains;

1.3. arbitrating legitimate conflicts of interest.

2. Deciding on the legitimacy of people claiming to represent national governments.
3. Protecting the consumer against a registry abusing its monopoly position.
4. Promoting competition in the registration industry.
5. Protecting consumers against loss of data in the case of failures of registries or registrars.
6. Protecting "defenseless" terms like generic words, religious terms and geographical locations from inappropriate exploitation.
7. Enforcing uniform rules of conduct across the DNS.
8. Enforcing privacy protection on registrants' personal data.
9. Protecting consumers from inappropriate content on the Internet.

Some of the above are controversial topics: there is not necessarily a consensus that they should be done, nor necessarily that they should be done at an international level, nor that they should necessarily be done by ICANN. The current ICANN has attempted to chart a course between the Scylla of doing nothing and the Charybdis of doing everything; all its detractors seem to agree that the course is not right, but many of them disagree about which way the rudder should be tilted.

4. Appropriate and inappropriate control methods

There are a few well known methods for getting people to do the Right Thing, and not to do the Wrong Thing:

1. Appeals to morals generally work - until the benefit of violating the moral constraint crosses a certain limit (which is different from person to person, or from organization to organization). When there is no agreed moral basis, this does not work at all.
2. Contractual relationships work - until one party sees a big enough advantage in breaking the contract, or he discovers things that are not covered by some reading of the contract text. Certainly provides full employment benefit for lawyers.
3. Denying service to those who do the Wrong Thing works - as long as those people need that service, and cannot easily replace it with something else. With the DNS, replacing the root service is relatively trivial - the data is openly available, and cannot easily be made secret.
4. Lawmaking authority works - as long as there is a common jurisdiction (or interlocked set of jurisdictions) to appeal to.

Some control methods that have been tried, but are probably inappropriate:

5. A small set of decision makers having to listen to anyone who wants to voice their opinions before making a decision. Problem: time does not scale.
6. A large group of people with different vested interest having to achieve consensus before a decision is announced. Problem: they don't converge - or converge by exhausting the people who have sense but not enough time.

Some things to be avoided:

7. Decision deadlock, where no decision gets made because one cannot agree upon a decision procedure (IANA prior to ICANN tried this one for new gTLDs; ICANN emulated it for about 2 years)

8. Decisions with technical impact being made without considering the technical impact. Many fear that current ICANN and a government-controlled ICANN would be that.
9. Decisions with social impact being made without considering the social impact. Many fear that a technologist-controlled ICANN or a government-controlled ICANN without direct user input would be that.
10. Decisions with economic impact being made without considering the economic impact. Many fear that an ICANN not controlled by the registry/Registrar business would be that.

Sections 1 to 4 above are based on the cited analysis by Harald Alvestrand, but have been edited and may not reflect the intention of the original author. What follows is not based on the cited analysis.

5. ITU-T's control methods - schematic

In terms of the above analysis, the control methods that are used by ITU-T can be schematically described as follows.

1. Identify, via collaborative work between all members, specific issues where there are problems to be resolved. Make the description of the issue and the problem to be solved as specific as possible.
2. Engage in wide consultations regarding possible solutions. Contributions are expected to be in the form of actual proposals for solutions.
3. Agree a process and method for a solution. Capture that in writing (Recommendations). Formally approve the agreed process and method.
4. As part of the agreed process and method, agree:
   4.1. a group of technical experts who will be responsible for the good administration of the agreed process and method;
   4.2. a broadly constituted oversight (or appeals) body for that group of experts;
   4.3. a professional staff to implement the instructions received from the technical experts;
   4.4. a manager directly responsible to stakeholders, who is responsible for the work of the professional staff.

6. ITU-T's control methods – an example

The schematic of section 5 above can be illustrated with a specific example, administration of telephone numbering resources.

1. The issue is: Application of Numbering, Naming and Addressing Plans for Fixed and Mobile Services. More details are given at: http://www.itu.int/ITU-T/studygroups/com02/sg2-q1.html .
2. Consultations are carried out within ITU-T Study Group 2 (SG2), see: http://www.itu.int/ITU-T/studygroups/com02/index.html .
3. The solutions are captured in several Recommendations, the key ones being E.190, E.164, and E. 164.1. Recommendations can be accessed at: http://www.itu.int/rec/recommendation.asp?type=series&lang=e&parent=T-REC .
4. For the well-known international telephone country codes (for example, "1" for the USA and "41" for Switzerland), the agreed process and method are:
   4.1. On the basis of the agreed general principles and working methods for code allocation, documented in the Recommendations cited above, SG2 has created a group of experts (technical committee), who provide advice as needed in order to assist the Director of TSB to handle difficult issues.

The Chairman of SG2, the Deputy Chairman, the Chairman of Working Party 1 (WP1), the Rapporteur for Question 1 (Q.1/2) and the Associate Rapporteur for Q.1/2 comprise the technical committee. The names and institutional affiliation of the people associated with these functions are listed at: http://www.itu.int/ITU-T/studygroups/com02/mgmt.html and http://www.itu.int/ITU-T/studygroups/com02/rapporteurs.html .

4.2. The oversight body is SG2 itself, to which decisions can be appealed.

4.3. The professional staff is the SG2 Counsellor, supported by a very small team who maintain the actual databases and publish information updates addressed to all interested parties. The actual database is available online at: http://www.itu.int/ITU-T/inr/codes.html .

4.4. The Director of TSB is the manager responsible for the work of the professional staff. He is elected every four years by the ITU membership.

It is not proposed that this same, existing, technical committee would handle any future IP-related issues that might be referred to ITU-T. On the contrary, it would be expected that new people—people with IP expertise—and new procedures, to be developed by the concerned people, would be brought into the process.

Annex B: ICANN's shortcomings

According to Mr Lynn (all bullets below are direct quotations from the cited paper by Mr Lynn):

1. ICANN was to serve as an alternative to the traditional, pre-Internet model of a multinational governmental treaty organization. The hope was that a private-sector body would be like the Internet itself: more efficient – more nimble – more able to react promptly to a rapidly changing environment and, at the same time, more open to meaningful participation by more stakeholders, developing policies through bottom-up consensus. It was also expected that such an entity could be established, and become functional, faster than a multinational governmental body.
2. … the hope was that ICANN could accomplish the necessary coordination and management tasks more quickly and more efficiently than the only apparent alternative – a multinational governmental body of some kind.
3. But despite [some] progress, all the original expectations of ICANN have not been realized. ICANN is still not fully organized, and it is certainly not yet capable of shouldering the entire responsibility of global DNS management and coordination. ICANN has also not shown that it can be effective, nimble, and quick to react to problems. ICANN is overburdened with process, and at the same time underfunded and understaffed. For these and other more fundamental reasons, ICANN in its current form has not become the effective steward of the global Internet's naming and address allocation systems as conceived by its founders. Perhaps even more importantly, the passage of time has not increased the confidence that it can meet its original expectations and hopes.
4. … a candid assessment of ICANN's performance to date would have to conclude that it has fallen short of hopes and expectations.
5. I have come to the conclusion that the original concept of a purely private sector body, based on consensus and consent, has been shown to be impractical.
6. I have concluded that ICANN needs reform: deep, meaningful, structural reform, based on a clearheaded understanding of the successes and failures of the last three years. If ICANN is to succeed, this reform must replace ICANN's unstable institutional foundations with an effective public-private partnership, rooted in the private sector but with the active backing and participation of national governments.
7. The process of relocating functions from the US Government to ICANN is stalled. For a variety of reasons described in this document, I believe that ICANN's ability to make further progress is blocked by its structural weaknesses. To put it bluntly: On its present course, ICANN cannot accomplish its assigned mission.
8. … ICANN has gone about as far as it can go without significant additional participation and backing from national governments. Absent a substantial increase in the efforts of governments to support and encourage the continued development of the private sector approach, I do not believe that ICANN will be able to complete the transition from US Government control to global private sector management of the DNS and related functions of the Internet.
9. I am now convinced that the original desire to avoid a totally governmental takeover of the IANA functions led to an overreaction – the choice of a totally private model. With three years' experience, it is clear that model is simply not workable. It is not workable because it leaves ICANN isolated from the real-world institutions – governments – whose backing and support are essential for any effective global coordinating body to accomplish its assigned tasks.

10. Though many in the traditional Internet community react strongly against the very mention of governments, it is simply unrealistic to believe that global coordination of the DNS can succeed without more active involvement of governments.
11. Governments play a unique role in representing the broad public interests of their populations. So far, ICANN's existing structures have not engaged the attention, commitment, and support of governments to the necessary degree.
12. Funding … must be significantly increased, and sources of funding broadened. Funding to come from both governmental and private participants. Funding to include both contributions for core functions and fees for services.
13. [ICANN] survives today on a heavily negotiated revenue stream generated from a small number of very interested intermediaries – who also have major influence in establishing the ICANN budget.
14. ICANN today cannot do everything it should do or in a timely manner.
15. … the ICANN process as presently funded will never be able to fulfill its intended coordination and consensus building tasks, …
16. A fully funded ICANN probably requires an operating budget of 300-500% of its current budget level, plus funding for significant one-time expenditures if funding of root name server operators and the establishment of appropriate reserves are included.
17. ICANN does not have the necessary resources even to continue at the current level of operations.
18. The current role of the US Government is not consistent with long-term global stability.
19. Today, [ICANN's] legitimate future prospects are, in my judgment, non-existent, unless we engage in meaningful reform of ICANN's structure and operations.
20. Either we need a renewed commitment to ICANN's original mission, accompanied by a clear focus on the specific steps that need to be taken to put ICANN in a position to accomplish that mission, or we need to consider whether ICANN should seek to withdraw in favor of a different global coordination approach.
21. ICANN will, in my opinion, either be reformed or irrelevant within the next several months.
22. The required level of funding is in the order of US $ 25 million per year for the next three years.
23. Process that prevents effectiveness is a failure.

Annex C: Quotes from Mr. Lynn on ICANN's core values and mission

What follows are quotes from Mr. Lynn's cited paper on reform:

1. [ICANN's core values are] openness and broad participation.
2. ICANN's assigned mission [is] to provide… administrative and policy management of the Internet's naming and address allocation systems.
3. ICANN's mission is effective management and coordination of those few, higher-level elements of the Internet's naming and address allocation systems that require or benefit from global management and coordination, while abstaining from actions that might interfere with the creativity and innovation that has made the Internet such a dynamic resource.
4. Governments play a unique role in representing the broad public interests of their populations.
5. Experience has shown that the influence, authority, and close cooperation of governments is essential to accomplish ICANN's mission.
6. What is needed at this stage if ICANN is to carry out its mission is neither a totally private nor a totally governmental solution, but rather a well-balanced public-private partnership.
7. The essential participants in an effective ICANN are, in no particular order: (a) the various infrastructure providers of the Internet, broadly defined; (b) major users; (c) the relevant technical community and (d) national governments;
8. What may not be quite so obvious is my conclusion, based on all our experience to date, that active national government participation in ICANN is critical to its success. Indeed, in the final analysis, national governments are perhaps the most irreplaceable supporters of ICANN, in the sense that – notwithstanding the efforts or desires of other stakeholders – the backing of governments is necessary if private sector coordination of the Internet's naming and address allocation systems is to be feasible.
9. I am convinced an increased governmental role is essential if ICANN is to carry out its mission.
10. National government participation, in my view, is also essential to end the Sisyphean effort of searching for a workable public accountability mechanism for ICANN.
11. Although governments vary around the world, for better or worse they are the most evolved and best legitimated representatives of their populations – that is, of the public interest.
12. The fact is that the Internet, and therefore management and coordination of the naming and addressing functions of the Internet, are critically important to governments, because they are critically important to their citizens and businesses.
13. [Some] believe that because ICANN is not itself a governmental organization, it should build its own government-like institutional foundations on a global scale. … Perhaps, but when it comes right down to it, governments or bodies appointed with government involvement can, it seems to me, certainly stake a better claim to truly reflect the public interest than a few thousands of self-selected voters scattered around the world.

Annex D: ICANN's Mission

What follows are extracts from the cited paper detailing ICANN's functions[21]. The indented text that follows is directly copied from the cited ICANN paper (except that the section numbers, such as 1, 2 have been added).

1 Overview

The Internet Corporation for Assigned Names and Numbers (ICANN) is responsible for coordinating the Internet's naming, address allocation, and protocol parameter assignment systems. These systems enable globally unique and universally interoperable identifiers for benefit of the Internet and its users.

These systems are highly distributed: hundreds of registries, registrars, and others, located around the world, play essential roles in providing naming and address allocation services for the Internet. ICANN's paramount concern is the stability of these remarkably robust services.

As overall coordinator of the Internet's systems of unique identifiers, ICANN's role, while defined and limited, includes both operational and policymaking functions.

2 Operations

In the operational sphere, the ICANN staff perform a range of day-to-day services, including:

(1) maintaining the DNS root zone file,
(2) allocating top-level blocks of IPv4 and IPv6 addresses and AS numbers to the regional Internet registries,
(3) maintaining 120+ registries of protocol port and parameter numbers,
(4) publishing online databases of information about the top-level domain registries included in the DNS root zone file,
(5) operating one of the thirteen authoritative DNS root name servers, and coordinating the overall DNS root name server system,
(6) publishing the InterNIC website and related functions,
(7) operating the .int registry,
(8) maintaining common/technical IP address spaces, such as the private-use address space,
(9) managing the reverse delegation namespace at the top level, and
(10) administering the DNS implementations of certain technical registries, such as .arpa and the legacy infrastructure-related .int zones.

In addition, ICANN staff perform a set of day-to-day administrative and policy functions relating to the generic top-level domain (gTLD) registries, including:

(1) accreditation of competitive registrars;
(2) supervising the administration of the Uniform Dispute Resolution Policy;
(3) handling of complaints about registrations;
(4) monitoring and enforcement of registry and registrar agreements, and
(5) implementation of data escrow programs.

For the country-code top-level domain (ccTLD) registries, ICANN staff handle, investigate, and process requests for delegation and redelegation, and for changes in the TLD nameservers specified in the root zone file.

3 Security

Finally, ICANN has the responsibility for policy coordination with respect to the security of the various parts of infrastructure that make up the operational DNS. This activity is reflected in the

[21] ICANN Staff, cited above.

recent creation of the Standing Committee on Security and Stability. In addition, ICANN has certain operational security responsibilities with respect to ICANN's operational activities. Finally, ICANN attempts to nurture and encourage continuing and serious attention to security and stability issues by all participants in the DNS, and to ensure that necessary tasks are undertaken by some responsible party.

4 Policymaking

In the policymaking sphere, ICANN is responsible for developing and implementing policies related to each of its operational functions. The nature and scope of ICANN's policymaking role differs for each function.

For example, in the area of IP address and AS number allocation, ICANN's responsibility extends only to global addressing policies; local policies are made by each regional Internet registry or lower-level Internet registries. ICANN's policy role for the country-code top-level domain registries (ccTLDs) is similarly limited to global policy coordination with deference to each local Internet community's responsibility to set its own registry-level policies (i.e., registration criteria, pricing, dispute resolution, mechanisms for local community participation and policymaking, etc.). In the area of protocol numbering, ICANN administers the IANA registries pursuant to the instructions of the Internet Engineering Task Force (IETF).

By contrast, ICANN plays a more direct and significant role in setting registry-level policies for the global top-level domain registries (gTLDs), such as .com, .net, .org, .info, .name, and .biz. In effect, ICANN serves as the global Internet community's open policymaking forum for the gTLD registries.

In its initial charge from the U.S. Government, embodied in the 1998 White Paper, ICANN policymaking was to be guided by a set of non-technical principles: preserving stability; promoting competition; relying where possible on private-sector, bottom-up, participatory mechanisms that reflect the functional and geographic diversity of the Internet; development of efficient dispute resolution alternatives (for the gTLD registries); and promoting accountability in management (for all registries).

These principles are necessarily somewhat general, which has led to some confusion and disagreement about the exact boundaries of ICANN's policymaking mission. This has led some to suggest that those boundaries should be restated and described in as much detail as is feasible, taking into account the necessary flexibility required to effectively deal with the rapidly changing nature of the Internet. Such an effort, to the extent it produced useful guidance both for ICANN and the Internet community as a whole, would undoubtedly be a helpful contribution to the current ICANN reform discussions.

A note on terminology: Historically, most of the operational functions described above were performed under the label of the Internet Assigned Numbers Authority (IANA). Though administered by a single team at the Information Sciences Institute of the University of Southern California, the IANA functions were performed at the direction of two sources: the IETF and the U.S. Government. Pursuant to an agreement with the U.S. Government and a Memorandum of Understanding with the IETF, ICANN is currently responsible for the full set of IANA functions. Thus, one should keep in mind that IANA refers to a set of functions, and that ICANN is the organization designated separately by the U.S. Government and the IETF to perform the IANA functions for the benefit of the global Internet community.