

# ICANN:

Connections and Conflict

# 2009-2012



This document was commissioned by Rod Beckstrom, ICANN President & CEO (2009-2012).  
The events and analysis reflect his personal perceptions.



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The Internet belongs  
to no country –  
and every country.  
It belongs to all of us.



– Rod Beckstrom

Late in 2011, Russia prepared for the first time to register Internationalized Domain Names (IDNs) in Cyrillic script, allowing Internet names to shed the limitations of the Latin alphabet. Observers wondered what the demand would be. One prediction claimed that as many as 100,000 Cyrillic IDNs would exist by the end of the year. Yet the moment registration opened Nov. 11, so many requests flooded in that the target was reached in the first three hours – then surpassed. At the end of six hours, 200,000 Cyrillic domain names existed; by the end of the week more than one-half million had found homes on the Internet. Even the optimists had underestimated people’s hunger to be connected in their native language, using their own alphabet.

Enabling a stable Internet is the mission of the Internet Corporation for Assigned Names and Numbers. For if all roads once led to Rome, now they all lead to cyberspace, and ICANN’s important role in administering the unique names and numbers of the Internet touches 242 countries and territories. The organization keeps the ordinary miracle of the Internet flowing unabated, allowing users every day to open 100 billion web pages and look up 1 trillion domain names. Its work is what keeps the Internet a single, unified network that connects two and a half billion of us, and allows us to get to wherever, whatever and whoever we want to on the Internet.

This is a look back at ICANN from 2009 to 2012. In the last three years, the employees of ICANN and ICANN’s far-flung, multi-stakeholder community have worked tirelessly to strengthen the Internet, improving it for today’s users and preparing it for the several billion more users expected in the coming years. Those years coincide with the tenure of President and CEO Rod Beckstrom. Beckstrom’s belief in collaboration and bottom-up leadership forms the core of how the entire organization has helped the Internet move forward. Indeed, his vision – “One world. One Internet. Everyone connected,” is nearer to reality now than it was when he first began.

When making a speech about Internet security two years ago, Beckstrom said, “The question is, not what we want to do, or what is popular or easy. It is, what do we owe the world?” Because the culture of ICANN encourages employees to keep that question in the forefront, they bring to their work a commitment to make the world, and the Internet that connects it, a more inclusive place.

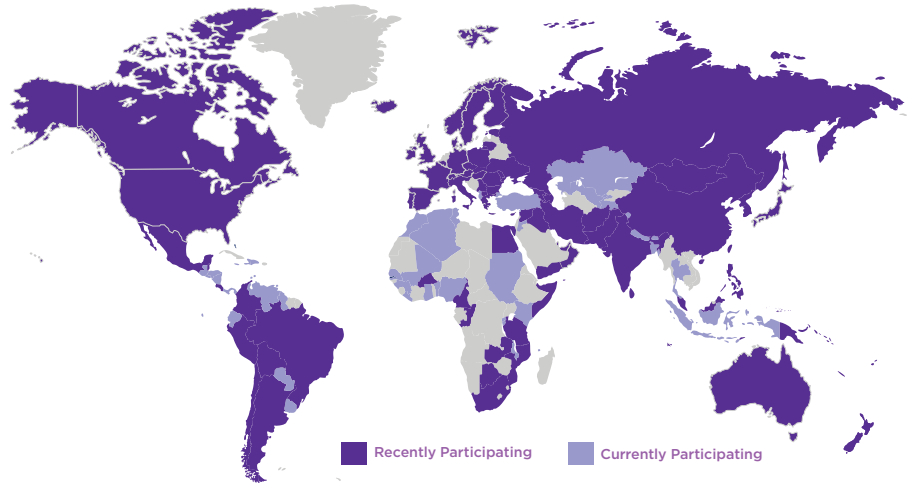
## ENTERING A GLOBAL STAGE

In 2009, ICANN officially became a much more global organization. On September 30th of that year, Beckstrom signed the Affirmation of Commitments, committing ICANN to reviews by the global Internet community and declaring that ICANN is independent and not under the control of any one entity. The Affirmation of Commitments firmly integrates ICANN into the international community it serves. With that step, ICANN demonstrated that the consensus-driven model the organization uses is best equipped to coordinate this vital resource.

“The Internet belongs to no country – and every country. It belongs to all of us,” Beckstrom said. “When all voices are heard, no single voice can dominate an organization - not even governments. Not even the government that facilitated its creation.”



### New members to ccNSO



“  
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”

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That participation has grown as ICANN has tried to more closely understand and reflect the needs of all of its members, from countries and participants on its advisory boards, to ordinary Internet users.

To facilitate that understanding, the ICANN Board voted in 2002 to create the interim At-Large Advisory Committee (ALAC). In 2007, 5 Regional At-Large Organizations (RALOs) were organized by At-Large Structures and some individuals. The ALAC selected its own member to ICANN’s Board of Directors in 2010.

The Global Partnerships Fellowship program (which sponsors community members to attend conferences) expanded, too. Between the program’s start in 2007 and 2010, 239 Fellows from nearly 100 countries attended ICANN meetings. They ordinarily would not be able to finance all the travel costs involved, though ICANN meetings themselves are free, and open to the public.

During ICANN’s three global meetings each year, there is a public session that is streamed over the Internet during which members can ask questions remotely. Remote participation throughout ICANN has steadily grown. Uniquely among similar global bodies, at each meeting the ICANN board and management take the stage before an audience to answer questions or hear comments submitted over an open microphone or remotely via the Internet. People simply line up and tell ICANN what they think about how ICANN and its related functions should be run. A more structured body, the Council of the Generic Names Supporting Organization, representing registrars, registries, commercial interests and non-commercial interests, operates within ICANN. In 2010 the number of governments added to the Governmental Advisory Committee rose to 104 (though ICANN’s aim is still for all governments to become members).

It’s hard to remember that a little over a decade before, critics aimed withering barbs at the ICANN’s initial board of directors for being a closed club. It had 10 members then representing just seven countries. “Democracy Tugs at Internet Agency” blared one 1999 headline in The New York Times.

In fact, democracy has never stopped tugging at ICANN, and neither has relentless criticism.



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Conflict is an important part of the backdrop in making good decisions. No process based on fielding the demands of more than 200 nations regarding a network that binds them all can be done without constant feedback, some of it negative. “We tend to live in a culture of perpetual criticism,” Beckstrom said. “It is unique, and very valuable.” The trick, he said, has been to help the employees appreciate the vital nature of their work and stay productive – while being exposed to a daily flow of criticism that can, by its nature, be demoralizing. And it’s important to sift through the criticisms to respond appropriately, and make changes when they serve the common good.

Strengthening the ICANN staff and Board has been key, Beckstrom and others have said, and a solid framework is part of that. Toward this end, ICANN launched an intensive review of its conflict-of-interest policies and took steps to benchmark its performance against other international organizations. As an added layer of transparency, a team of independent ethics experts has analyzed ICANN’s ethics policies and recently made their report public; the report’s recommendations were warmly welcomed during a public forum at the ICANN meeting in Prague.

As global participation in ICANN meetings has expanded, more bi- and tri-lingual employees have been hired to reflect the expansive nature of ICANN’s work. In 2011, 75 percent of ICANN employees hired were fluent in more than one language. ICANN employees, once dominated by North America, now reflect the multinational world they serve. Six separate languages are spoken by the management team alone.

The bottom-up approach used in the community is also used by ICANN’s staff of about 140. At any one time, 40 percent of the staff is involved in Organizational Effectiveness Teams, acting in groups of a dozen members to improve the organization. As shown in the Gallup survey of employee engagement, (a widely-used measure of company staff productivity and commitment), ICANN’s ratio of engaged employees – the vast majority - puts it among the top-tier organizations measured. Members of the company’s top management are evaluated on how well individual managers develop the employees they supervise, strengthening the organization.

That kind of leadership matters.

“Rod’s great accomplishment is that he’s put together a world-class executive team,” said Elad Levinson, vice president of organizational effectiveness. Indeed, in the last three years, Beckstrom brought in 10 of the 12 top executives at ICANN.

But Beckstrom’s belief in consensus was his guiding principle. Beckstrom acknowledges that he often deliberately holds back his own opinion at a meeting until he has heard from all participants, so as not to skew the process of building consensus.

“At meetings, he is an exceptional listener. He is into finding the best solution, not necessarily his solution,” Levinson said. “One of his accomplishments is that he has built such a strong executive team that it functions well when he is on the road.” And that has been often, Beckstrom has traveled at least 50 percent of his tenure, holding meetings in 16 different countries during just one three-month period last year.

Beckstrom brought to both the organization and his dealings with other countries his belief that it is not the best use of his power as CEO to establish top-down policy. “You cannot micromanage this place,” Beckstrom said. Instead, he has tried to enable a process of debate that leads to a convergence of differing opinions in reaching a decision. Then the challenge is to implement it.

**LANGUAGE FLUENCIES  
of the EXECUTIVE TEAM:**

- Spanish**
- German**
- French**
- Arabic**
- Chinese**
- English**



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He used as a guide Heisenberg's Uncertainty Principle in physics, which expresses the inherent uncertainty of being able to accurately measure both a particle's position and its momentum at any given moment. "I trade off understanding the exact current position or location of the huge set of issues in ICANN, so that I can understand the momentum and can focus on getting things unblocked," Beckstrom said, particularly as it applies to consensus-building.

But a vital part of leadership through consensus lies in choosing the moment to end the perpetual discussion in order to allow a decision to be implemented. With so many global voices, each with a different view, sometimes putting on the brakes is difficult. Yet it is necessary, both to support and move forward the efforts of staff, and also to get the job done.

### **RUNNING OUT OF ROOM: ROLLING OUT IPV6**

Even as ICANN worked to broaden participation, the organization – and the world – faced a more fundamental problem: The Internet was running out numbers in the form of IPv4 addresses. By the end of 2010, of the 4.3 billion unique IPv4 addresses, just 100 million were left unassigned. The growth of devices that use broadband, particularly mobile devices, is growing exponentially. Predictions are that by 2016, four out of every five devices connected to the Internet will be mobile devices and will need Internet addresses. The ability to expand IP addresses would allow for thousands of unimagined uses as more and more devices get connected to the Internet. Just as an example: If you are on a business trip in Los Angeles, with the click of a mouse you could unlock your home hundreds miles away to let in a repairman. Already items as different as pacemakers and power grids are Internet-enabled.

Fortunately, the technical community had been working for more than a dozen years on an expansion of the numbering system with IPv6. The new system provides a mind-boggling capacity for growth – 340 trillion trillion trillion IP addresses. ICANN's role has been to administer both the final allocation of original IPv4 numbers in 2011 as well as to support the move to IPv6 numbers.

In 2006, the Board ratified a global policy recommended by ICANN's ASO (Address Supporting Organization) for the allocation of IPv6 addresses. The global policy gave to each regional Internet registry an IPv6 allocation that dwarfed the number under the old IPv4 system. IPv6 not only provides room for more and more devices to get linked to the Internet, it's more secure than the previous system, providing better encryption and authentication.

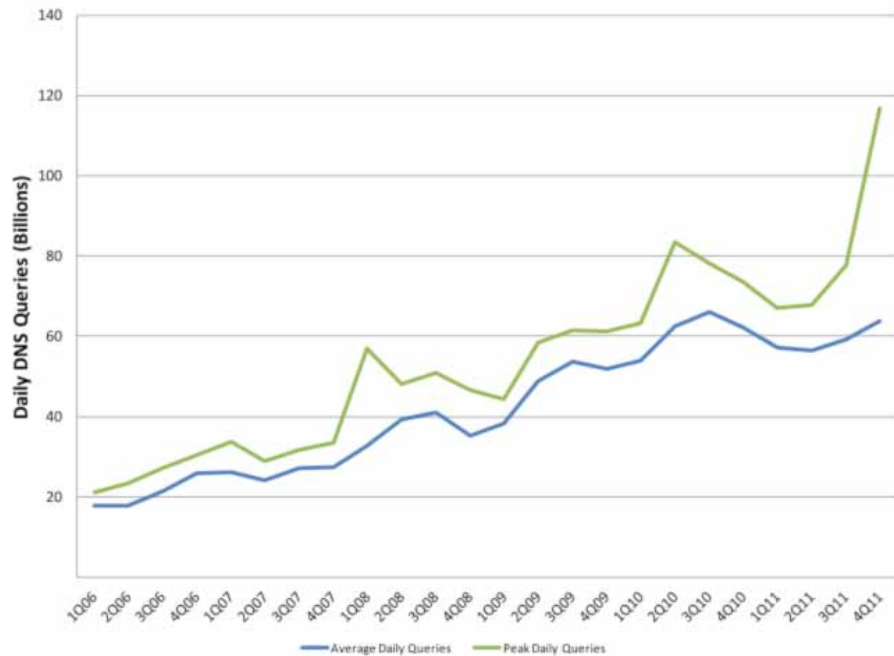
The rollout of IPv6 is not without obstacles. The two systems are not compatible and it is foreseen that both addressing systems will co-exist for decades. But few if any Internet users will notice the transition, which has been taking place over the last several years. Top sites such as Facebook and Google have already switched to IPv6. Other businesses that switched earlier reported that the transition was neither expensive nor particularly time consuming. Flipkart, India's largest online books retailer, made the transition in May. According to Amod Malviya, Flipkart's vice-president of engineering, the shift was not expensive and "a lot easier than most companies generally think," taking a team of four people two weeks to shift the company onto the new protocol.

Most important, with IPv6, the Internet gains a path of growth that leads far into the future.



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The rollout of new generic Top Level Domains promises to change the Internet forever. In June 2012, there were 1,930 proposals for 1,409 different gTLDs.  
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**Daily DNS Queries doubled since 2009**



### INCREASING SECURITY

Long before this critical transition, ICANN had been concerned about making the Internet domain name system safer. Security is one of the organization’s strategic mandates, along with stability and reliability. Yet threats are everywhere. The Internet was originally designed for openness and scalability, not for security. It was not designed as a secure platform for highly sensitive transactions, particularly commercial ones, which now routinely take place. Flaws in any system are a given. But sometimes, everyone gets a wake-up call.

In 2008, Dan Kaminsky of security firm IOActive, demonstrated a flaw in the root zone that could allow hackers to secretly redirect traffic to fake websites, hijacking information sent to banking, government or other sensitive websites. Others demonstrated the same weakness. A patch that made sites more secure only slowed down the amount of time it would take to attack websites. Data thefts and attacks took place at CitiBank, Lockheed Martin, Sony, RSA Security, and elsewhere. The escalation of incidents added urgency to the need for greater Internet security.

ICANN, with Verisign and US Department of Commerce, in 2010 began rolling out DNSSEC – Domain Name System Security Extensions – for the Internet root zone to make man-in-the-middle attacks, substitutions or redirection far more difficult. The most significant structural improvement to the DNS in 20 years, DNSSEC cryptographically protects DNS data with digital keys, giving assurance that the information has not been modified in transmission. By the end of the year, dozens of country domains had implemented the security extensions. Technical experts at registries implemented DNSSEC for top-level domains, with .net gaining it late in 2010 and .com following suit in 2011.

## IDN Languages



## BEYOND THE ALPHABET

ICANN's leadership facilitated the execution of a challenging change to the Internet: Enabling top-level domains in non-Latin script, like Cyrillic, Chinese or Arabic, making the Internet a truly global form of communication compatible with any language. Enabling the web to function seamlessly in different scripts required significant communication and technical coordination. For example, Chinese is written in both traditional and simplified characters, while Arabic is written right to left. Each script presents unique technical challenges. "Volunteers all over the world worked on this for years," said Naela Sarras, manager for the IDN fast-track program. "Engineers worked hand in hand with linguists and technical people."

In 2009, ICANN voted to open up the Domain Name System (DNS) to Internationalized domain names that would enable millions around the world to type in entire Internet names in their native language instead of forcing people to keep switching keyboard characters when they searched the Internet. At first, the change would extend to country code domains – the web addresses ending in .ru for Russia, or .vn for Vietnam.

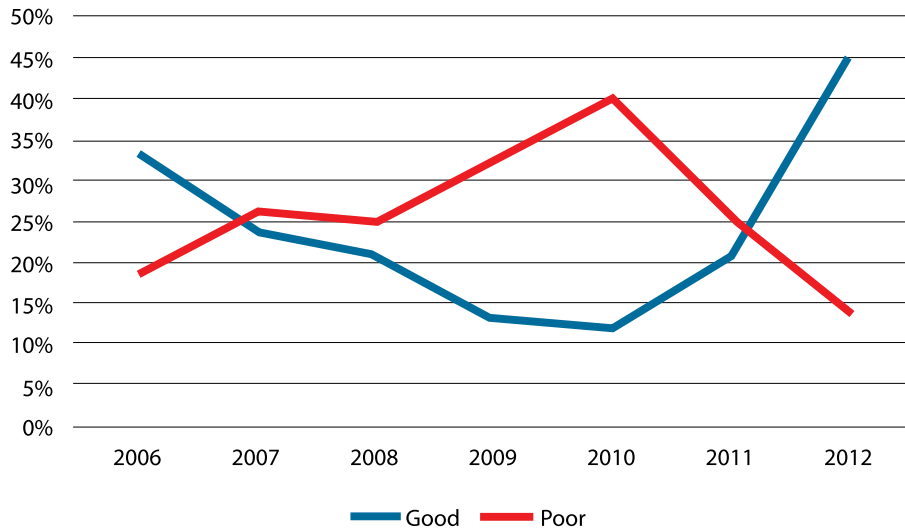
Naysayers warned that the changes would make it more difficult to fight hackers. But Beckstrom said that ICANN was ready for the changes, and confident that the organization could make them work for everyone. Most welcomed the expansion as one that would only increase Internet traffic and make the web more accessible in every country.

Beckstrom said as much in a speech in January of 2010: "The past decade saw Internet growth at 176% in North America. But it saw growth of 1,392% in Africa and 1,648% in the Middle East. Yet that penetration is still at only 7% in Africa, so there is a huge unanswered need, a huge unmet hunger for information and access that can only challenge us for the years ahead," he said.

Thirty-five countries immediately submitted applications for their IDN country code top level domain (think of the ".fr" for France or ".mx" for Mexico you see in those countries' addresses).



**ICANN Satisfaction Survey**  
**This year, more satisfied than ever before**



The first four non-Latin country code names in 2010 included Egypt, Russia, Saudi Arabia and United Arab Emirates. Twenty-six more countries or regions followed suit in 2011.

In 2011, ICANN voted to vastly expand new generic Top Level Domains, or gTLDs, to allow new Internet names ending in any word in any language. Instead of the familiar .com, .net, or .gov, additional strings of characters could be added after the dot.

The planned introduction of generic TLDs sparked controversy. Advertisers claimed that the move would increase “cybersquatting,” if people and institutions rushed to buy suffixes such as .auto. Others said it would increase confusion, making it easier for people to go on fake websites. Companies claimed that the move would cause trademark infringements. At one contentious public meeting, ICANN employees were even asked how the plan could affect the Treaty of Versailles that ended World War I.

“I don’t envy the ICANN staff, which has to work out a compromise that will prevent the outbreak of a world war over domain names,” wrote Saul Hansell for The New York Times.

ICANN moved forward amid the clamor, instituting a system in January of 2012 in which an applicant could apply for a gTLD in any language. But gaining a gTLD would take much more than filling out paperwork. It cost \$185,000 and applicants would have to be able to demonstrate technical competency – no small task.

Finally, on June 13, ICANN announced the results: there were 1,930 proposals for 1,409 different gTLDs, mostly coming from North America and Europe. There are many different applications in new language scripts, for communities, and for other types of use. When more than one party wants the same gTLD, ICANN will encourage them to work out their differences and come to an agreement. If no compromise is possible, ICANN will conduct an auction.





“The Internet is about to change forever,” said Beckstrom, as he announced the proposed new gTLDs. Many said the new domain names would unleash creativity and the creation of new markets. Within hours of the announcement, journalists wrote tens of thousands of news stories about the potential new names. But the new gTLDs won’t appear overnight. The applications may take as long as a year to approve, with care taken to assure that the companies applying can measure up to the financial and technical responsibilities involved.

Beckstrom said the new gTLDs would be a move towards innovation, something that is almost always controversial at first, even as it often becomes accepted and considered “normal” later on.

In reflecting on the Internet, Beckstrom said in a 2010 speech, “We are an infrastructure and a set of values. We are an engineering construct – in fact, an engineering miracle if you ponder the more than 10 million times per second that the DNS system is used world wide.

“As I leave my post after three years, I would like to thank everyone including the community, the ICANN Staff, the Executive Team, Board, and all participants in ICANN for our work together,” Beckstrom stressed.

“ICANN is one of the great, unseen organizations of the world,” Beckstrom said when asked about the last three years. “The Internet crosses every border. Some want to put the Internet in a box and control it, but they can’t,” he said. “The Internet transforms everything it touches.”

But in the end, everyone and every country is engaged. Iran is engaged. North Korea is engaged. And ultimately, because of that, the Internet, and ICANN, is a very important platform for peace.