ICANN 69
VIRTUAL ANNUAL GENERAL

PERCEPTIONS of IT DECISION-MAKERS on the USE of DNSSEC in the LAC Region

Dr. Pablo Rodríguez, DM-IST

Purpose of the Study

- Understand the perceptions of IT decision-makers of LAC ccTLD operators that have or have not implemented DNSSEC.
- Develop, based on the findings, a set of recommendations that facilitate and promote the implementation of DNSSEC among LAC ccTLD operators.

Population and Study Participants

47 ccTLD operators in Latin America and the Caribbean

26 ccTLD operators in LAC that have not implemented DNSSEC

24 ccTLD operators in LAC that participated in the study

12 ccTLD operators of each category (implementers and non-implementers)

Theme 1: Implementing DNSSEC Help Improve ccTLD's Cybersecurity but Cost and Misconfigurations are a Disadvantage.

		Non-implementer	Implementer
+	a Protects against cache poisoning	9	10
-	b Will not improve domain registrations	2	10
-	c Misconfigurations are a risk	5	6
+	d Improves ccTLDs' cybersecurity	6	3
-	e Complexity and difficulty is a disadvantage	0	7
+	f Provides competitive advantage	5	0
-	g Cost of implementing is a disadvantage	4	0

Differences are contrary to expectations

Differences are consistent with expectations

Theme 2: Dedicated Personnel with a High-level Skillset in Security is Needed to Implement DNSSEC.

			Non-implementer	Implementer
-	a	Highly trained technicians are needed	7	5
-	b	Lack of infrastructure and budget for hiring, training, and personnel retention are challenges	8	0
-	c	Scarcity of trained personnel	7	0
-	d	Training and key-signing ceremonies are challenges	0	3
+	e	Reduce end-user workload	0	3

Theme 3: Social Influencers Promote DNSSEC Implementation in ccTLDs.

			Non-implementer	Implementer
+	a	Government, banking institutions, and transactional websites should be using DNSSEC	9	11
-	b	Superiors and stakeholders are impeding the implementation of DNSSEC	2	2
-	c	Malicious actors do not want them to use DNSSEC	0	7
+	d	ccTLDs will implement DNSSEC in the near future	6	4
+	e	Perceived ICANN, LACNIC, LACTLD, or IETF want them to use DNSSEC	4	4
+	f	Don't know anyone who objects to using DNSSEC	8	0
+	g	Perceived end-users want them to use DNSSEC	4	3
+	h	Perceived registrars want them to use DNSSEC	3	0
+	i	DNSSEC is important and strategical	3	0

Theme 4: Lack of a Technical Infrastructure and Trained Personnel are Challenges that Impede DNSSEC Implementation in ccTLDs.

			Non-implementer	Implementer
+	a	DNSSEC Practice Statement (DPS) and or celebrating a key-signing ceremony preserves DNSSEC"s chain of trust	4	7
-	b	A security breach (compromised key) or a misconfiguration of DNSSEC during the implementation would result in both economic loss and reputational damage	4	5
-	c	Two or three experts are needed to implement and/or maintain DNSSEC	0	8
-	d	Perceive lack of institutional support	8	0
-	e	Infrastructure, hiring of additional personnel, training, and legal services is costly	7	0
+	f	Infrastructure is not costly	0	5
+	g	Perceive having institutional support	2	3

Theme 4: Lack of a Technical Infrastructure and Trained Personnel are Challenges that Impede DNSSEC Implementation in ccTLDs.

			Non-implementer	Implementer
+	h	DNSSEC does not pose a risk	0	4
-	i	Have not celebrated a key-signing ceremony and/or do not plan to celebrate one any time soon	0	4
+	j	Implementing best practices, increasing personnel, and using a robust infrastructure preserves DNSSEC's chain of trust	3	0
-	k	Convincing a superior to implement DNSSEC is a leadership challenge	3	0
-	l	Do not have the budget to hire additional personnel	2	0
	m	Outsource services	2	0
-	n	DNSSEC implementation will increase in operations or customer service workload	2	0
+	o	Education and communication preserves DNSSEC's chain of trust	2	0

Theme #5: Implementing DNSSEC Improves the ccTLD's Reputation.

			Non-implementer	Implementer
+	a	Reputational advantage	3	7
+	b	Competent	3	7
+	c	Trustworthy for implementing DNSSEC	6	5
+	d	Trustworthy for key-signing ceremony	3	3
+	e	Secure	5	2
+	f	Innovator	0	4

Theme #6: Overcoming Financial, Technical, Promotional, and Workload Challenges Help Improve Corporate Clients' Adoption of DNSSEC.

		Factors promoting or impeding DNSSEC implementation among Corporate clients	Implementer
-	a	Lack of awareness	5
-	b	Technical challenges	3
-	c	High costs	3
+	d	Enforcement	3
-	e	Lack of interest	6
+	f	Promotional incentives and education	6
+	g	Reduce implementer workload	6

Findings

- Lack of budget to support (Org & Hdw) & misconfigurations impede implementation of DNSSEC
- Workshops are needed to provide didactic materials that promote the importance of implementing DNSSEC in government, banking, and commercial institutions
- Reputation is a major driver of technology adoption

Recommendations

- Develop workshops to increase institutional support and reduce DNSSEC's implementation difficulty
- Develop workshops to explain to ccTLD operators the costs (minimum # of personnel needed, training, and infrastructure) involved in the implementation and maintenance of DNSSEC
- Develop interfaces to reduce the workload of corporate client's zone-signing with the ccTLD.
- Integrate a warning system in all major web browsers that notifies visitors of DNSSEC presence (similar to the SSLs)

Thanks!

To access the entire study:
https://search.proquest.com/docview/2446984935?
Web: www.rodriguez.pr
Email: pablo@rodriguez.pr