Cyber Security Framework for Citizen Centric Services

19th National Conference on e-Governance

Data Security Council of India
Jan 22, 2015
New Delhi
Agenda

- Technology and Citizen Services
- Cyber Security Threats and Dilemmas
- Global Study
- Indian Scenario
- Gaps and Suggestions for Improvisation
- Cyber Security Framework
- Recommendation Roadmap
Technology & Citizen Services

Citizen Centric Services from Citizen’s point of view rather than government departments

Digital Presence ➔ Web based Interaction ➔ Online Transaction ➔ Shared Governance
Technology & Citizen Services

Trends
a. India 2nd largest internet user base
b. Social Networking: Over 65 M
c. Mobile subscribers: Over 1 B
d. Urbanization; Rising Individualism Index

Role
a. Anywhere, anytime access for services
b. Interoperability across multiple systems
c. Improve quality of service
d. Deliver Value

Examples
a. Railway reservations
b. Income-tax e-filing
c. Aadhar linked PDS schemes
d. Passport, e-VISA, Property Tax, Utility Bills, Ration Card App

Significant role of Technology
Cyber Security Threats & Dilemmas

**Threats**

- Confidentiality
- Integrity
- Availability
- Privacy

**Dilemmas**

- Stimulate the economy vs National Security (e.g. Estonia DDoS | 2007)
- Open Data vs Data Protection (e.g. Medical and educational records)
- Infrastructure modernization vs Critical Infrastructure Protection (e.g.: Iran Nuclear | Stuxnet | Aug 2010)

**Scenarios and Examples**

1. Office of Personal Management, US | Data Breach | Jun 2015 | 21.5 million records | 5.6 million fingerprint sets stolen

2. Chennai Municipal Corporation | Dec 2015 | Allow anyone to search birth and death certificates

3. Hacker caused power outage | Jan 2016 | Ukraine, Half of Ivano Frankivisk | Blackenergy Malware
# Global Study

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<tr>
<th>Country</th>
<th>Citizen Centric Services</th>
<th>Measures</th>
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| US      | Digital Government Strategy including:  
- Open Government Directive  
- 25 point implementation plan to reform federal information technology management | - National Strategy for trusted identities in cyberspace (NSTIC)  
- Evaluate and streamline security and privacy processes  
(https://www.whitehouse.gov/open) |
| UK      | Tech Clusters, ‘Smartphone State’ | - Choice and Access to Citizen Services  
- UK Data Protection Act  
- National Identification Scheme |
| Europe  | IDABC – Interoperable Delivery of European Government Services to public Administration, Businesses and Citizens | All the 34 countries have both specific measures for their local lands and collective directives to safeguard citizen’s sensitive information |
| Singapore | MyeCitizen Portal REACH | National Cyber Security Masterplan 2018 |
Indian Scenario

**Policy**

National Cyber Security Policy 2013 (Section 3, point #10,11,12)

The Information Technology (Amendment) Act, 2008 (such as section 43A, 66,67, 68, 72A, 77A)

IT Rules 2011

**Awareness**

Information Security Education and Awareness Phase 1 | Multilingual Content Generation (17719 candidates (Education + Awareness + Training) under ISEA 1 (http://isea-pmu.in/home/)

Information Security Education and Awareness Phase 2 | 28 Dec 2015 | Mass Outreach 3 crores

**Design**

Generally ICT infrastructure for majority of the citizen services is from NIC infrastructure
# Gaps and Suggestions to Improve

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<th>GAP</th>
<th>Policy</th>
<th>Awareness</th>
<th>Design</th>
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<tr>
<td>More focus on Citizen information rights infringement by ‘body corporates’ or individuals’</td>
<td>Limited content around the security concerns for citizen centric services</td>
<td>Services are hosted and built on infrastructure do not have standardised framework for implementing security</td>
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## Suggestion

### Right Amendments in IT AA 2008
- Privacy Protection

### Mass Awareness programs tailored for specific services:
- Possible Harms
- Legal Help that can be availed

### Context based Security to be inculcated in design
- Security Organisation Structure
Cyber Security Framework

- User
  - Identification and Authorization
    - Privacy
    - Minimal Disclosure
    - Anonymity Support
  - Data Security
    - Sovereignty
    - Data Localisation
    - Interoperability
    - Secure Communication
  - Threat Management
    - Profiling
    - Protection
    - Detection
    - Response
  - Building Resilience
    - Risk based decisions
      - Across Data Flow
      - People centric security

- Transactions

- Governance
  - Visibility
  - Analytics
  - Integration
## Recommendation Roadmap

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<th>Areas</th>
<th>Action Plan</th>
<th>Tentative Timeline</th>
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| **Policy Environment** | a. Study of laws and policies considering all the impacted disciplines such as Trade, Relations and National Interest  
b. Public Consultation for policy environment  
c. Appropriate changes to be made | Around 2-3 Years     |
| **Citizen Awareness**  | a. Create Citizen Awareness Delivery Framework (Less than a year)  
b. Tailored security messages at different interventions of specific services  
c. Roll out initiatives to increase the outreach to entire citizen base using services by enrolment of new agencies, mass media campaigns | Ongoing             |
| **Secure Design**      | a. Conduct risk assessment for potential threats for all citizen service transactions  
b. Deploy context based security controls  
c. Security & Privacy certification of citizen services  
d. Institutionalize the organisation structure for citizen services e.g.: CISO for services | Around 2-3 Years     |
Thank You
Cyber Security Framework: Context based Security

1. Attack driven defence
2. Simplifying security and building trust
3. Risk based Security
4. Build Resilience
5. Learn from each other