

Cyber Security Framework for Citizen Centric Services

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Data Security Council of India

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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 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

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 Frankivsk | Blackenergy Malware

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)

Global Study

Country	Citizen Centric Services	Measures
US	Digital Government Strategy including: <ul style="list-style-type: none"> - Open Government Directive - 25 point implementation plan to reform federal information technology management 	<ul style="list-style-type: none"> - 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'	<ul style="list-style-type: none"> - 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

Policy

Awareness

Design

GAP

More focus on Citizen information rights infringement by 'body corporates' or individuals'

Limited content around the security concerns for citizen centric services

Services are hosted and built on infrastructure do not have standardised framework for implementing security

SUGGESTION

Right Amendments in IT AA 2008

Privacy Protection

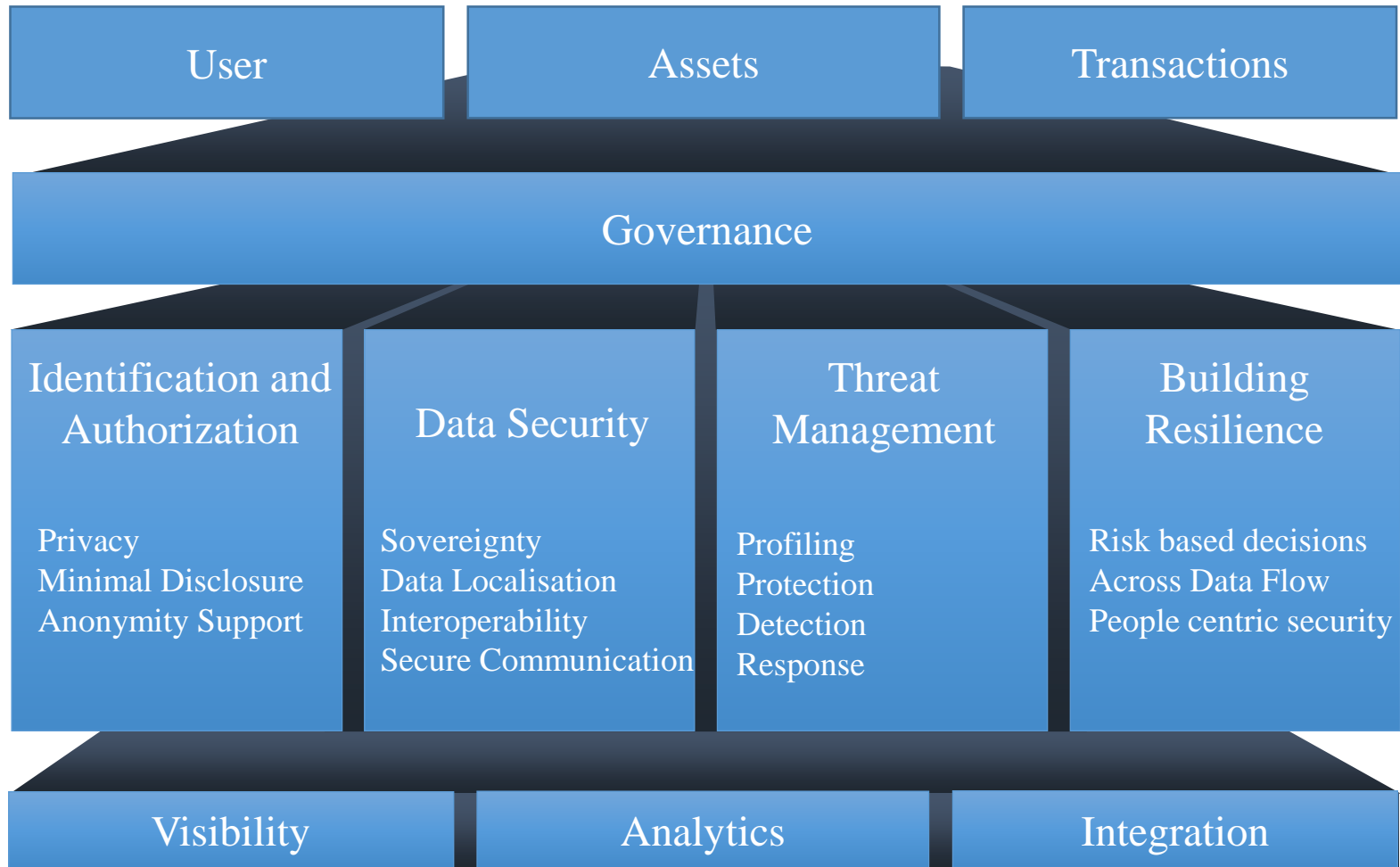
Mass Awareness programs tailored for specific services:

- a. Possible Harms
- b. Legal Help that can be availed

Context based Security to be inculcated in design

Security Organisation Structure

Cyber Security Framework

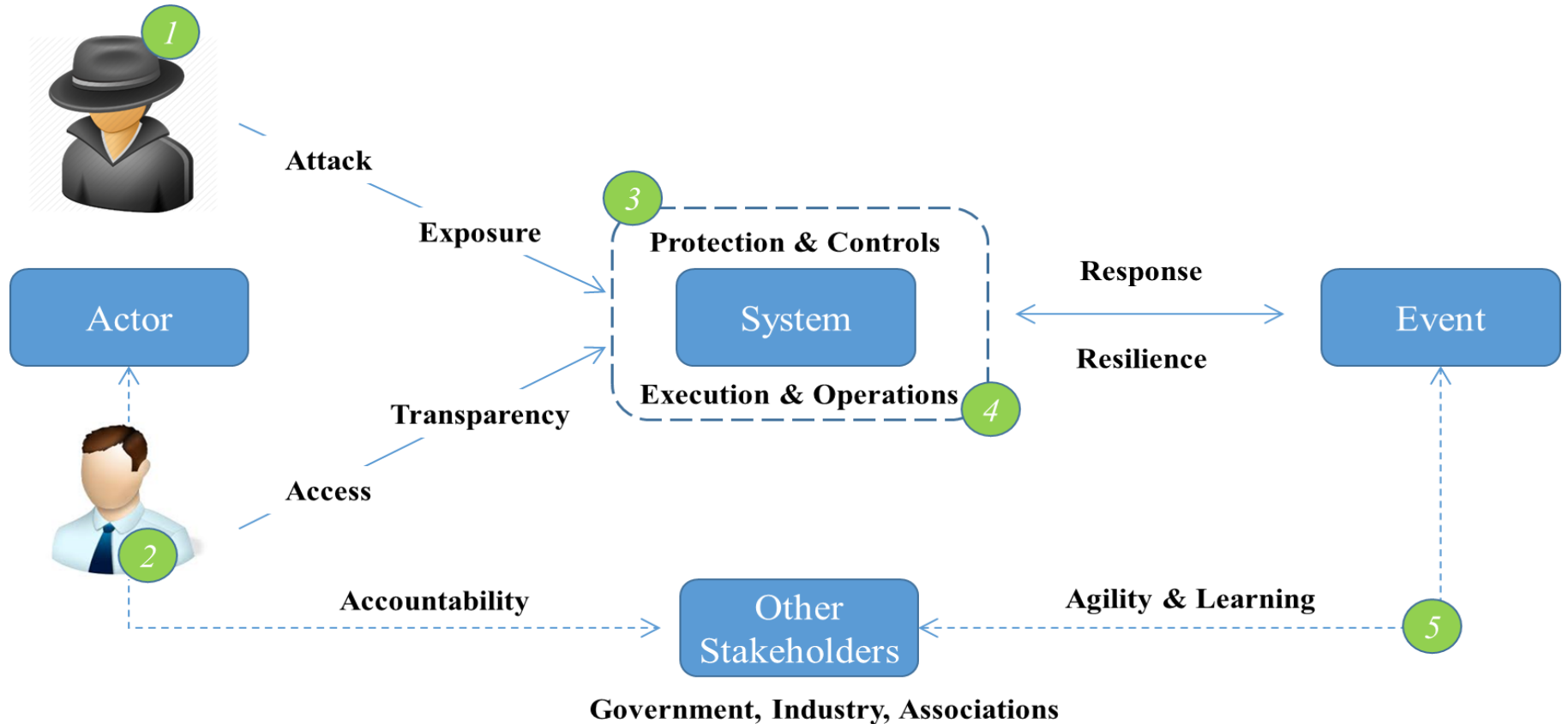


Recommendation Roadmap

Areas	Action Plan	Tentative Timeline
Policy Environment	<ol style="list-style-type: none">Study of laws and policies considering all the impacted disciplines such as Trade, Relations and National InterestPublic Consultation for policy environmentAppropriate changes to be made	Around 2-3 Years
Citizen Awareness	<ol style="list-style-type: none">Create Citizen Awareness Delivery Framework (Less than a year)Tailored security messages at different interventions of specific servicesRoll out initiatives to increase the outreach to entire citizen base using services by enrolment of new agencies, mass media campaigns	Ongoing
Secure Design	<ol style="list-style-type: none">Conduct risk assessment for potential threats for all citizen service transactionsDeploy context based security controlsSecurity & Privacy certification of citizen servicesInstitutionalize 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