Association of Enterprise Architects Delhi Chapter

Monthly Meeting
Knowledge Session
Value Proposition of EA (IndEA) in Public Sector

IndEA - Framework for Government Transformation in India

24 Dec. 2019
<table>
<thead>
<tr>
<th>Topics</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction: Brief about AEA: Delhi Chapter</td>
<td>6:30 to 6:35</td>
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<tr>
<td>2. Presentation “Value Proposition of EA (IndEA)” by Ms. Reshma Agarwal</td>
<td>6:35 to 7:10</td>
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<td>3. Feedback/Q&amp;A for the IndEA presentation</td>
<td>7:10 to 7:15</td>
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<td>4. Member Feedback/Discussions for AEA Delhi Chapter Future Plan 2020</td>
<td>7:15 to 7:30</td>
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Who We Are...

The Association of Enterprise Architects is the definitive professional organization for Enterprise Architects Delhi Chapter

- President
  AEA India, Chief Architect Open Group
  Dr Pallab Saha

- Board Member AEA India
  Tarun Gupta

- Chair Delhi Chapter
  Chander Shekher

- Vice Chair Delhi Chapter
  Aurobind Upadhyaya

- Treasurer
  Sandeep Singh
• Aim
The AEA Delhi Chapter aims to advance the professional excellence and status of Enterprise Architecture and at the Delhi/NCR

• Mission
To enable and encourage the highest standard of enterprise architecture practice by members.
# Value Proposition of EA (IndEA) in Public Sector

<table>
<thead>
<tr>
<th>Topics</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduction : IndEA- Background</td>
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<tr>
<td>2 IndEA- Background</td>
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<tr>
<td>3 Expected Value Proposition in Public sector</td>
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<td>4 Use case</td>
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<td>5 Future Plan</td>
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Reshma Agarwal  
National e-Governance Division  
Senior Manager cum Consultant

12 years of experience in e-Governance and IT  
• Enterprise Architecture  
• Program Management  
• Government Process Re-engineering  
• Open source technologies  
• Geographical Information System  
• Certified Scrum Master  
• TOGAF 9.1 certified  
• Project Management Professional (PMP)  
• Business English Certificate (BEC) Vantage  
• Life Office Management Associate (LOMA)  
• Oracle Certified Associate (OCA), 9i  
• Sun Certified Java Programmer 5.0 (SCJP)  

Existing Issues

**Governance**
- Lack of *end-to-end* processes digitization
- *Sub-optimal Processes*

**Application**
- *eService delivery levels* require improvement
- Unfriendly *UI/UX designs* leading to insufficient system adoption
- Insufficient *re-use of software platforms* leading to resource wastage

**Data**
- Lack of reliable *standardized open data sharing (APIs)* leading to insufficient public-private partnership
- *Siloed Systems* leading to data duplicity
- Lack of *accountability in data* entry and data management leading to incorrect data and data security concerns

**Technology**
- Lack of *agility* in systems leading to high time to market
- Technical solutions used lack vertical and horizontal *scalability* and *connectivity by default* (micro-services)
- Insufficient adoption of emerging technologies like *social media, mobile, block-chain, AI, IoTs, cloud* etc.
EA in Governments Around the World

Many countries have utilized enterprise architecture approach to successfully undertake transformation journeys

The United States of America
Singapore
South Korea
Australia
Estonia
United Kingdom
New Zealand
Germany
Finland

EA mandated by Law
India with E-Government Development Index (EGDI)-0.5669: Ranks 96/193 on UN e-Government Index 2018- We need to take large strides to make up!!

Enterprise Architecture approach is a good way.

Working Groups under the leadership of Shri J. Satyanarayana, finalized the India Enterprise Architecture (IndEA) framework and Digital Service Standard (DSS)

NeGD was entrusted with the role to implement IndEA and DSS including capacity building across Ministries / States

The IndEA framework has been notified Vide GoI Notification: No. 8(22)/2016-EG-I), dated 9th October 2018. President & CEO, NeGD shared the same with State Governments and Ministries.
“to establish best-in-class architectural governance, processes and practices with optimal utilization of ICT infrastructure and applications to offer ONE Government experience to the citizens and businesses”.
Applicability of IndEA

Primary Principles of IndEA (9/36)
1. SDG Linkage
2. Integrated Services
3. Sharing & Reusability
4. Technology Independence
5. Data Sharing
6. Cloud First
7. Mobile First
8. Federated Orchestration
9. Primacy of Principles

- IndEA Core
- Financial Management
- HR Management
- Performance Management
- Procurement
- Litigation Management
- Land & Resources Management
- Grievance Management
- Unified Contact Centre
- Data Analytics
- Service Delivery Management
- Right To Information

16 Verticals
12 Horizontals

Standardize
Integrate
Virtualize
IndEA
(Eight Reference Models & Framework key Principles)

Guides design and implementation of IndEA
- Primacy of Principles
- Discipline
- Transparency
- Accountability

Specifies standards and Best Practices for security of assets of IndEA
- Data Integrity
- Data Privacy and Confidentiality

Interoperability and Integration of IndEA
- Openness and Transparency
- Technology and Vendor Neutrality
- Data Portability
- Primacy of User Experience
- Elimination of Digital Divide
- Multilingualism

Specifies technology landscape and standards of IndEA
- Technology Independent Architecture
- Future-proof Architecture
- Open Standards
- Shared Infrastructure
- Cloud, Mobile First
- Availability

 Defines methods for outcome assessment to IndEA
- Linkage to Sustainable Development Goals (SDG)
- Outcome Orientation
- Identifying Performance Categories through Value-Chain
- Enable quantitative and qualitative data driven decisions

Provides portfolio of service to IndEA
- Maximization of Benefit
- Prioritization of SDG Initiatives
- Integrated Services
- Process Re-engineering

Provides Application Portfolio and s/w development methods to
- Ease of Use
- Sharing & Reusability
- Technology Independence
- Application Security

Lifecycle management of Enterprise data of IndEA
- Data Asset
- Data-Sharing
- Data-Trustee
- Data Security
- Common Vocabulary and Data Definitions
Value of IndEA Reference Models

- **An Architectural Reference Model**
  - Depicts the Components of each Domain (*Business, Application, Data* etc)
  - Identifies the relationships between the Components
  - Defines the Standards applicable to the Domain

- **Adoption of Reference Model**
  - Enables fast-tracking Architecture Development (cuts 70% of effort)
  - Ensures compliance with relevant Standards
  - Enables compliance with Architectural Principles

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**IndEA Reference Model(s)** → **Reference Architectures for the Domain** → **Solution Architecture** → **Implementations**

- Problem Space
- Stakeholder Needs
- Business Reqs.

- Constraints
- Opportunities
IndEA Core – SW Infrastructure Services

- Integrated service Portal (Umang)
- Middleware (DigiLocker)
- Enterprise App Store (MeitY Appstore)
- Aadhaar
- Identity & Access Mgmt. – SSO (JeevanPramaan & DigiLocker)
- Messaging Gateway (email & messages)
- API Gateway (National Data Highway)
- Document Management System (eOffice)
- Open Forge (Collaborative SW Dev)
- UPI, BHIM
- eSign
- Feedback Management System (RAS)
- GIS Platform (NCoG, Bharatmaps)
- Linguistic Support (eBhaasha)
- MDDS Standards Directory
- Search Engine
- Data Analytics Platform
- Blockchain Infra
- Re-Usable AI components
- ...
Human Resource Management (HRMS)
Right to Information (RTI)
Litigation Management (eCourts)
Govt. Procurement (E-procurement, GeM)
Performance Management (eOffice)
Financial Management System (PFMS)
Grievance Management
Learning Management System (LMS)
Knowledge Management System (KMS)
Project Management Information System (PMIS)
Appointments & Scheduling (Visitor Mgmt. System)
Remote Consultation
Asset Management System
Service Delivery SW (Service Plus)

IndEA Core - Common Use Applications
Life Cycle of a Digital Service

Digital Service Life-cycle

A. Define
1. Description
2. Classification
3. Prioritization

B. Realize
4. Design
5. Development
6. Delivery

D. Govern
9. Governing DSS
10. DSS Strategies

C. Measure
7. Measurement
8. Assessment

Digital Service Standard spans all the 4 Phases and the 10 Steps
Objectives:
- Define the taxonomy of the digital service
- Describe and detail the standards/principles for all the attributes identified
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Electronic Service</th>
<th>Digital Service</th>
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</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>Service Request and Service Delivery are electronic.</td>
<td>The interaction is digital end-to-end</td>
</tr>
<tr>
<td>Channel</td>
<td>Predominantly web</td>
<td>All devices/ channels</td>
</tr>
<tr>
<td>UX</td>
<td>Generic / Common to all</td>
<td>• Personalized, Localized</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Al-driven</td>
</tr>
<tr>
<td>Integration</td>
<td>Limited to an Application</td>
<td>Enterprise-wide integration</td>
</tr>
<tr>
<td>Architecture</td>
<td>Service Oriented Architecture</td>
<td>• Enterprise Architecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Open API-based</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Micro-Services Architecture</td>
</tr>
<tr>
<td>Technologies</td>
<td>Internet</td>
<td>SMACI (Social, Mobile, Analytics, Cloud &amp; IoT)</td>
</tr>
<tr>
<td>Scalability</td>
<td>Finite</td>
<td>Infinite</td>
</tr>
<tr>
<td>Interoperability</td>
<td>Needs conscious effort</td>
<td>By default</td>
</tr>
<tr>
<td>Dev Method</td>
<td>Waterfall</td>
<td>Agile, DevOps</td>
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## Benefits of IndEA

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<tr>
<th>Benefits</th>
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<tr>
<td><strong>End-to-end Digitization &amp; Re-engineering of Govt. Processes for ONE Govt. Experience</strong></td>
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<tr>
<td><strong>Enable Digital Services</strong>*&lt;br&gt;Cashless, Paperless, Consent-based, Frictionless, Time-Bound</td>
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<tr>
<td><strong>Enable viable ecosystems for sectors - health, education, agriculture with public private partnership</strong></td>
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<tr>
<td><strong>Demonstrate Utility &amp; Value-Blueprinting &amp; Pilot Implementation in 2 States</strong></td>
</tr>
<tr>
<td><strong>Raise Maturity Level of 1000+ eServices as per UN eService Maturity Model to Level IV i.e. Connected Services</strong></td>
</tr>
<tr>
<td><strong>Train Govt. 5,600+ Officers on India Enterprise Architecture and Digital Service Standard</strong></td>
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</tbody>
</table>

*Level IV as per [UN eService Maturity Model](https://www.un.org/esa/sustdev/nidp/esi/esi-model.html) i.e. Connected Services*
Enterprise Architecture (Health)
N-DEAR Ecosystem at the **HEI** Level

N-DEAR Ecosystem at the **State** Level

N-DEAR Ecosystem at the **National** Level

**Infrastructure Building Blocks**

**Data Building Blocks**

**Technology Building Blocks**

**Application Building Blocks**

**Access**

MyClass App(s)

Edu Portal(s)

Centralized Public Assets

Distributed Public/Private

Local Public/Private

Local Education Administration Authority (AED)

**AEA**
IndEA Implementation Methodology

Agile IndEA is about **Value**

Agile IndEA is **Iterative**

Develop **Just-Enough-Architecture (JEA)**

Develop **Just-In-Time (JIT)**
Agile IndEA
(Architecture Development and Delivery with Vision &)

Architecture Principles and Requirements

Sprint 0  DRP 0  Sprint 1  DRP 1  Sprint 2  DRP 2  Sprint n  DRP ∞
   Enterprise Vision  →  Business v1  →  Architecture v1  →  Solution v1
   |        |        |                  |        |        |                  |        |        |                  |        |        |                  |        |        |                  |
   |        |        |                  |        |        |                  |        |        |                  |        |        |                  |        |        |                  |
   |        |        |                  |        |        |                  |        |        |                  |        |        |                  |        |        |                  |
   |        |        |                  |        |        |                  |        |        |                  |        |        |                  |        |        |                  |

*DRP: Demo and Retrospective Planning

Products
Public Digital Platforms for Value Creation

Illustration: Unified Platform for Higher Education

- Single Sign-on for Users
  - Education Loans, Scholarships, Hostels
  - Entrance Exams, Admissions, Degrees
  - Income/Caste/Disability etc. Certificates
  - Education Resources, MOOCs
  - Promotion of Research
  - Assessment and Accreditation
  - Ranking, Regulation and Funding
  - Coordination with International Univ.
  - Manage Govt. Institutions e.g. IITs etc.

- Personalised Services

- Multiple Agencies (Govt., Pvt., Peer to Peer)
  - Quality Education for All

*IndEA: India Enterprise Architecture

Government: Service Provider to Service Enabler
Overall Approach ..... MeghEA

SDG Targets – SDG India Index, Meghalaya Vision 2030
- SDG India
  - Goals
  - Targets
  - Indicators
- Meghalaya Vision 2030

Department Inputs on Meghalaya Enterprise Architecture
- Key departments and corresponding directorates
  - Department Overview Presentations
  - Questionnaire response

Key Strategies
- Meghalaya Vision 2030 –
  - State Strategies for SDG Targets

Vision, Mission & Goals
- Department & Directorates –
  - Government units

Vision, Mission and Foundational Capabilities

Meghalaya Enterprise Architecture - Foundational Capabilities

Aligned to Agile IndEA
Future Plans

Support to Central Ministries & States and UTs

- Blueprint preparation for EA
- Implementation of EA
- Deliverable Review

Enabling Environment

- Empaneled EA Experts
- Empaneled Consulting & Implementing Agencies
- IndEA Repository
- Case Studies

IndEA Suite

- IndEA Core Platform
- Reusable tools and artefacts
- Reusable Architectural Building Blocks and Model Architecture

Providing funding support to Pilots

- Demonstrate the utility and value
- 2 Pilot Ministries
- 2 Pilot States

Capacity Building and Awareness & Communications

- Workshops – Nodal officer, Govt. officers, TOGAF Training
- Online content on IndEA
- Induction of EA Professionals in States / Ministries
- EA course at PG level
Questions /Feedback Related to IndEA Session?

THANK YOU!

Ms. Reshma Agarwal
reshma.agrwal@gmail.com
<table>
<thead>
<tr>
<th>Event</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter Monthly Meeting</td>
<td>12 no's</td>
</tr>
<tr>
<td>Webinars /Knowledge session</td>
<td>24 no's</td>
</tr>
<tr>
<td>Workshop on EA</td>
<td>Quarterly (4 Nos)</td>
</tr>
<tr>
<td>Annual Events (Open Group/AEA Conclave/Others)</td>
<td>2 to 4</td>
</tr>
<tr>
<td>White paper/Articles /Case Studies</td>
<td>Approx. 20-25</td>
</tr>
<tr>
<td>Newsletters</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Academics /Alumni /Guest Lectures</td>
<td>5 to 10</td>
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<tr>
<td>CIO Forum /Other Industry forum participation</td>
<td>5 to 10</td>
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Questions?

THANK YOU!

AEA Delhi Chapter

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www.globalaea.org/groups/New Delhi