



**Department of IT
Government of India**

eForms
POC

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The Journey & The Roadmap

- Committee for e-Enablement of Forms
- Study of Open Standards
- Study of various eForms Products
- C-DAC eForm Engine (Code name: *Fulcrum*)
- eForms POC
- POC findings
- Future Roadmap



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Committee for e-Enablement of Forms

- Committee formed to bring distinguished members together
- Well defined Terms of Reference
- Study of standards, tools & their application to eGovernance services
- Monthly review meetings chaired by Shri Shankar Aggarwal, Joint Secretary (eGovernance)



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Study of Open Standards

- Proprietary vs Open Standards
- W3C standards taken as reference model
- XML as basis for data exchange



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Study of various eForms Products

- Proprietary vs Open Source products
- Many competitive frameworks available from various vendors
 - Interoperability across certain tools were missing thereby leading to possibility of vendor and/or technology lock-ins
- Study of each tool with objectives of eForms usage from perspectives of Citizens, Private Operators & Department Officers



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C-DAC eForms Engine (Fulcrum)

- Originally built for meeting requirements of Development Gateway Foundation Project
 - Aid Management Programme
 - Primary objective was to create eForms at runtime by field officers for the purpose of conducting surveys & collection of data
 - In operations since 2005 in various developing countries
 - <http://amp.developmentgateway.org>



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Fulcrum

- Custom built product using Java Technologies
- Standards based – HTML, XML, J2EE framework
 - Open Standards
- Easy intuitive web based interface with an easy learning curve
 - for creation of eForms (department officer can design eForms for eGovernance Service)
 - for data entry by anyone (Citizen, Private operators)



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Fulcrum – Objectives

- Generate eForms which can be operated from any Standards compliant Browser without need for any plugin or any specialized client/reader (**No Plugin**)
 - Tested against Internet Explorer (5.x, 6.x, 7.x & 8.0), Mozilla Firefox (2.x, 3.x), Gaelon, Seamonkey
- Have minimum footprint in memory for optimum usage in across Low End Computers (**Light weight**)
 - The size of eForms is the only memory footprint. Even a 30 fields containing eForm is not more than 100 KB.



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Quest to avoid vendor, technology & platform lock-in

- Fulcrum & POC tested across various J2EE servers such as JBoss, Weblogic, Geronimo etc
- Fulcrum & POC tested across different flavors of Windows (Windows 2000 server, Windows 2003 server, XP, Vista) & *nix (BOSS, BOSS-64, Ubuntu Server, RHEL 5, Debian)
- eForms POC tested across various database systems such as Postgresql, MS SQL Server, My SQL

Fulcrum Demonstration

5 Minutes



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eForms POC

- C-DAC submitted a proposal for demonstrating a Proof of Concept on building of eForms using C-DAC's Fulcrum in order to
 - Understand the technicalities of conceiving eForm from paper based forms
 - Alignment with Metadata standards built by DIT
 - Paper forms are not uniform across geography
 - Identification of BPR requirements across eForms, across departments
 - Integration efforts in regards to Portal, Gateway & Departmental services

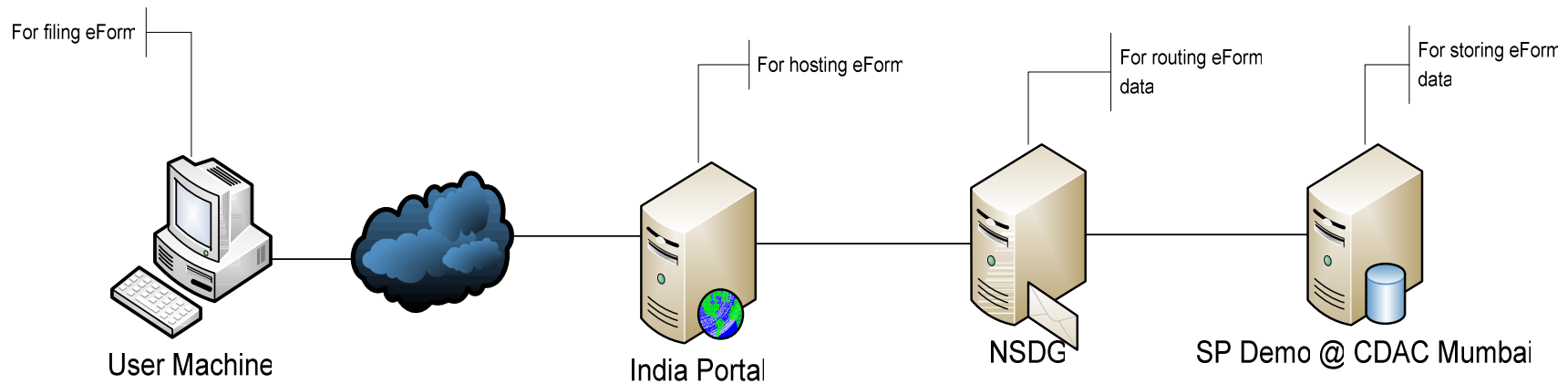


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Architecture & Scope

- eForm deployed on NSDG website
- eForm integrated with Gateway



- Demonstration scope
 - eFiling
 - Citizen data routing to a demo backend service via NSDG gateway



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eForms POC

- Based on committee recommendations industry partnered with C-DAC as domain consultants
- Industry provided with field experiences gathered during work on eDistrict POC
- First Prototype was demonstrated to Shri S R Rao, Additional Secretary , Shri Shankar Aggarwal, Joint Secretary and Mr Bhushan Mohan on March 29, 2009
- eForm POC was demonstrated to Shri Shankar Aggarwal & Committee members on April 29, 2009

POC Demonstration

10 Minutes



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Lessons & Learnings

- Need to keep citizen interface separate from Officer interface
 - Citizen should be able to supply with all necessary details with minimum of hassles
 - Uniformity can be targeted across State
 - Officer should be able to get the necessary details in an interface he is comfortable to see.
 - Officer interface can keep varying even across districts in the same state



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Lessons & Learnings

- Identification of Standards & guidelines
- Active participation & coordination with State IT and Line Departments
- To reach the Last Mile
 - Localization/Regionalization is quite important
 - A need for intelligent and innovative integration framework



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Milestone attained but Journey continues 😊

■ Roadmap

- ❑ eForms committee to release “GOI eForm standard” for eForm under aegis of DIT
 - eForm migration to open standards
 - Frontend Workflow Management Engines for eForm
 - XML signature implementation
- ❑ Product conformance to “GOI eForm standard”
- ❑ eForm POC migration to “GOI eForm standard”
- ❑ Interface for Integration with other MMPs like e-District



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Thank you

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