India has been very ingenious in finding workarounds but we have lost it along the way to modernization.

Organizations not designed ‘ground up’ for innovation will not be creative. Innovation can be extraordinarily disruptive.

Culture of innovation has to be nurtured in the country.

Must work with all stakeholders to select and deploy innovative improvements that measurably improve service quality and provides truly ‘out of the box’ thinking to the country.

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**2010-2020 DECLARED AS DECADE OF INNOVATION**

**INNOVATION IS A CULTURE NOT A STRATEGY**
NATIONAL INNOVATION COUNCIL [NINC] CREATED TO PROMOTE INNOVATION IN THE COUNTRY

- Incremental Improvements
- Process Innovation
- Next Practices
- Transformative Leadership
- Existing Operational Models

Business as Usual
ICT SUBGROUP OF HEALTH SECTOR INNOVATION COUNCIL IS PART OF NINC
Where we want to be

Quantum Leap in Planning Paradigm

Where we are today

Work backwards from where we want to be, to develop the Execution Plan to get there, not the reverse

NEXT PRACTICES - INNOVATION
CURRENT INNOVATION IN HEALTH ICT

Process:
- Consultation with program officers
- Review of the literature on Public Health ICT
- Study of innovations in Health care ICT
  - Functional Specifications of Public Health IT Systems
  - Study of IT systems for Telemedicine
  - Study of Hospital Information Systems

Mandate:
- To document various ICT innovations in healthcare
- To identify drivers of innovation
- To understand failures & successes and reasons associated
- Prepare & promote sustainable ‘eco system’ for ICT innovations in healthcare

### Systems Studied

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<th>National Program</th>
<th>Specific innovations</th>
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<td>NRHM-RCH</td>
<td>National HMIS Web Portal</td>
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<td>Gujarati- eMAMTA,</td>
<td>Tripura Tele-ophthalmology application</td>
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<td>Tamil Nadu- State HMIS (TCS)</td>
<td>Kerala Tele-oncology application</td>
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<tr>
<td>Andhra Pradesh – Historical HMIS Development</td>
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ALL PUBLIC HEALTH IT SYSTEMS ARE IN SILOS

- Programs/directorates/states have their own IT solutions for program reporting needs.
- Silos - All systems functioning in silos and doesn’t help in integrated decision making.
- Standards lacking – Architecture, I/O Data standards, Disease and Service codes, Interoperability standards.
- Design issues- Developed as Application for single purpose not as products
- Capacity building - change management is limited
- Process transformation - business process reengineering not done
PROPOSED NATIONAL E-HEALTH AUTHORITY TO DEFINE THE NATIONAL E-HEALTH ARCHITECTURE

E-Health Architecture: Key features

- Information exchanges [HIE], State & National.
- Registries and UID
- Set of Standards
- Flexible Data Input
- Flexible Data Output
- Online and offline modes
- Integration across systems
- Single System for field workers
- Multi modal connectivity
- Data privacy and security
- ICT for quality of care
- Capacity Building
- Procurement standardization
Most states have a paper based system that collects aggregate data which is converted to electronic form only at District level.
Some states have built capacity to collect patient-based data thru broadband and mobile from the facility level.
PROPOSED NATIONAL HEALTH INFORMATION NETWORK

National Health Information Network

- Payment Registry
- Indicator Registry
- Service Registry
- Patient Registry [UID]
- State Registry
- Disease Registry

Data Warehouse

Private and Govt.
E.g. RSBY, JSY

- Payers
- Patient

As per Privileges

Indicators

Reports

State2 Health Information Exchange

- State2 Health Information Exchange Portal

- MOHFW
- Reprod. & Child Health
- Directorates e.g. Malaria, IDSP, NACO
- Private Sector
- State HQ
- District Admin

Reprod. & Child Health at National Level

- Reprod. & Child Health at National Level

National Disease Programs e.g. Malaria, IDSP, NACO

State Health Programs e.g. EMRI, eMamta, HMIS, DHIS

Hospital Information Systems, EMR

Nutrition

Birth & Deaths

Private Sector

Private and Govt. Sector

State1 Health Information Exchange

- State1 Health Information Exchange Portal

- National Disease Program e.g. Malaria, IDSP, NACO

State Health Program e.g. EMRI, HMIS, DHIS

Hospital Information Systems, EMR

Nutrition

Birth & Deaths

Private Sector

Private and Govt. Sector

Reports

As per Privileges

Facility1 Facility2 Facility3 Facility1 Facility2 Facility3 Facility1 Facility2 Facility3
PROPOSED NATIONAL E-HEALTH ARCHITECTURE

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Directorates e.g. Malaria, IDSP, NACO
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As per Privileges
E-HEALTH ARCHITECTURE WILL ENABLE M-HEALTH AND TELEMEDICINE FOR DISEASE MANAGEMENT

Health Information Exchange for Disease Management
HEALTH INFORMATION SYSTEMS PILLAR SUPPORTS HEALTH OUTCOMES

Report of Planning Commission’ Steering committee on Health has dedicated chapter 3 for HIS
THANKS

Contact: Dr Pankaj Gupta
Partner, Taurus Glocal Consulting
Independent Consultant, NHSRC.
Member ICT Sub-Group of Healthcare SIC under PMO GOI.
Dr_pankajgupta@yahoo.com
drgupta@taurusglocal.com

Website: www.taurusglocal.com
Blog: http://www.healthcareitstrategy.blogspot.com/
LinkedIn: http://www.linkedin.com/in/drpankajgupta