18th National Conference on e-Governance

Partnership with Industry in Innovation & Education

Presentation by
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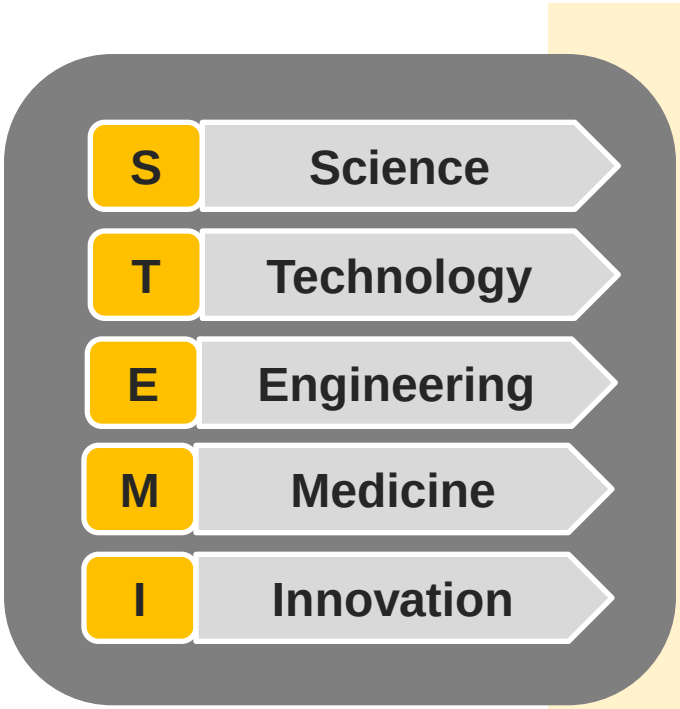
STEMI



- 4% of the global workforce is engaged in STEMI
- But, they account for 80% of the global GDP
- Hence, the importance of R&D and Innovation when Governments plan economic development

Why Government Must Partner with Private Sector

- Traditional funding sources are not keeping pace with infrastructure investment needs and the growing public demand for services.
- Private Partnership will help governments meet demands for development of modern and efficient assets, infrastructure and services, while providing value.
- Efficiency advantages from using private sector skills
- Sharing of risks with the private sector

Some Definitions of Innovation

- Innovation is ‘The specific instruments of entrepreneurship, the act that endows resources with a new capacity to create wealth.’ – Peter Drucker
- Innovation is simply new technology, i.e. the systematic application of (new) knowledge to (new) resources to produce (new) goods or (new) services.’
- Innovation : ‘The practical translation of ideas into new or improved products, services, processes, systems or social interactions.’ - The University of Melbourne.
- Innovation is the introduction of new ideas, goods, services, and practices which are intended to be useful.
- A newly introduced practice or method intended to improve the current practice.

Some Definitions of Research

- Simply put, Research is ‘Addition to knowledge, or the application of existing knowledge for new purposes’.
- Research is ‘The systematic investigation into, and study of, materials and sources in order to establish facts and reach new conclusions’.

National & State Innovation Institutions

Institution	Chairperson
National Innovation Council	
National Innovation Foundation Ahmedabad	Dr. R.A. Mashelkar
Gujarat State Innovation Council	Chief Secretary
Gujarat Educational Innovation Commission	Set up by Dept of Education, GoG
GTU Innovation Council	Vice Chancellor GTU
Biotech Innovation Cluster Mission	Mission Director, GSBTM
iCreate	Set up by I&MD GoG,GMDC
All Gujarat Innovation Society	Shri Sunil Shah
Vadodara Innovation Council	Dr. Madhu Mehta

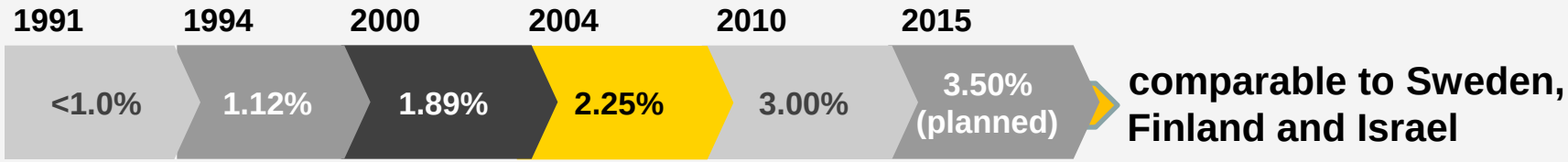
Innovation and Government – Singapore

Innovation and Government

- Innovations in the fields of S&T are a key driver of Singapore's economy
- Singapore adopted a consistent policy of

as the country's strategy for economic development

- Advanced nations have **Gross Expenditure on R&D (GERD)**, by public & private sector, of over 3% of GDP
- Through focus on R&D and Innovation, Singapore's GERD/GDP increased



Government Funding of R&D – Singapore

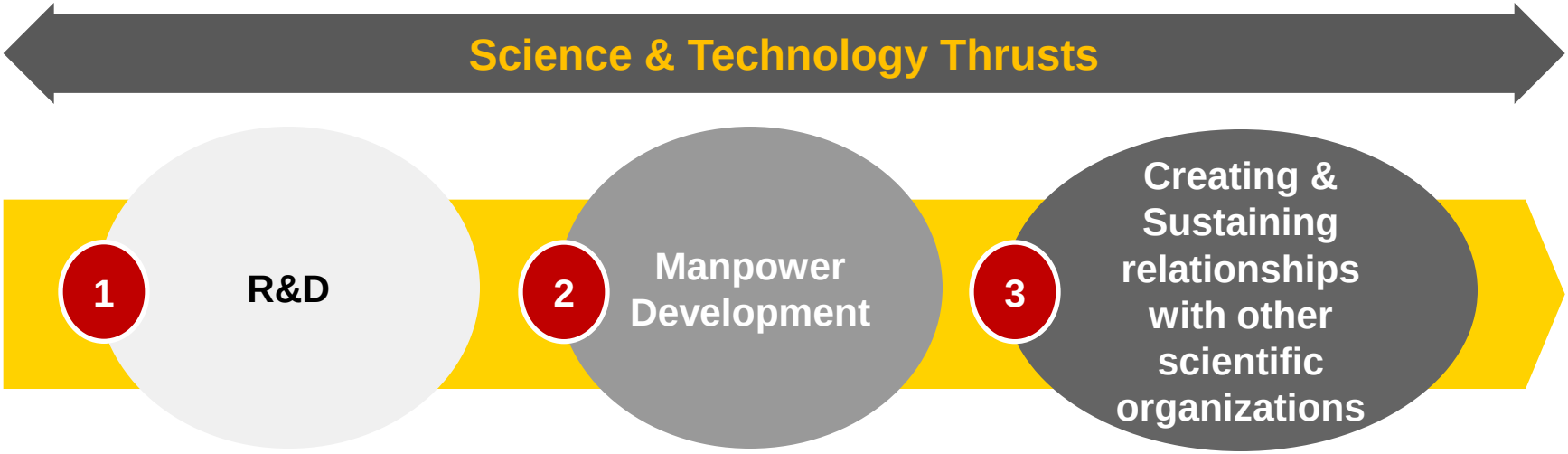
Historically, Singapore lacked a culture & suitable environment for R&D. To combat this, Government did as below –

- Develop broad-based technological & manpower capabilities in key areas
- Develop more specialized capabilities in a few key technologies within each area
- Setting up of Research Institutions and Centres to undertake the pre-competitive stage of R&D activities
- Providing assistance and support to the private sector in their developmental & commercialization efforts
- Developing general technology infrastructure to support R&D efforts by both public and private sectors

As in the case of Singapore till the 80s, India too lacks a culture for R&D.
This needs to be created, as Singapore did so successfully.
It also shows that governments can create a R&D culture over a period of time.

Innovation and Government - Singapore

- Due to strategic focus and concerted efforts in the development of pharmaceutical industry, **the Biomedical Sciences Industry in Singapore grew from US$ 6 bn in 2000 to US$ 31 bn in 2010**
- The main S&T thrusts that the Science Council advised the Govt. of Singapore were:



Implementation – Planning & Institutions

Purposeful, Focused Planning

Purposeful, Focused Planning

- Singapore formulated and implemented 5-year National Science & Technology Plans, since 1991
- Monitored the targets and structural changes
- Structural Changes will be required to be made with each Plan

Set up Institutions

Set up Institutions to take this initiative forward

- The Science Council of Singapore, through an Act, in 1967
- National Science & Technology Board, in 1991
- Agency for Science, Technology & Research (A*STAR), in 2001
- Research Innovation Enterprise Council (REIC), in 2005
- National Research Foundation, in 2006

Funding – Amount, Sources and How to Spend?

- **Funding pattern of Singapore :**
  - Creation of a US$ 2 bn R&D Fund in the 1st National Technology Plan (NTP) (1991-1995)
  - The 2nd NTP (1996-2000) had a Fund of US$ 4 bn for five years
  - The 3rd NTP (2001-2005) provided US$ 6 bn
  - S&T2010 had a total budget of US$ 13.55 bn
- The R&D Fund is the main source of funding for Singapore's R&D activities
- The budgetary allocation of Singapore is stated to highlight the importance that country gave to Innovation. **Gujarat can allocate funds as per its S&T Plan.**
- Gujarat can arrange the funds through Budgetary Support and Business Houses.

Applicability for Gujarat

- Among the most developed states of the country, Fastest growing
- Well-developed industrial base. Strong focus on manufacturing.
- The right environment – industrial, entrepreneurial, administrative, financial – exists in the state for STEMI
- The state has developed a versatile capability and experience through the Vibrant Gujarat initiative to attract foreign & domestic investment and technology, which are necessary for STEMI
- Agriculture, Dairy, Engineering, C&PC, Pharma, CRO, Energy, Water sectors are well developed in the state to be in a position to implement R&D.

As the right environment exists, focus on STEMI can take Gujarat to a higher level of value-added growth in modern sectors of economy

Funding – Amount, Sources and How to Spend?

- Systematically, encourage research projects in private sector. Private sector contributed 66% of GERD in Singapore in 2010
- The quantum of funding required will have to be assessed. The funds will be spent on
  - Implementing the S&T Plan/Program/Projects
  - R&D
  - Incubation
  - Increasing the number of Research Scientist & Engineers (RSEs) engaged in R&D in the total labour force of the state. **(Singapore increased it from <30 per 10,000 of labour force in 1991 to 105 in 2010)**
- MoU/MoA between Government/Universities/Industry/Private Institutions
- Fellowship /Scholarship / Internship for students by Industry**.**

Private Sector and Innovation-Led Growth in Malaysia

To improve education to support innovation-led growth and competitiveness, the Government of Malaysia is:

- Reforming the education system to increase student outcomes and improve the skills and employability of graduates
- Expanding access to, and improve the quality of, technical education and vocational training (TEVT) programs
- Implementing the Knowledge Transfer Partnership (KTP) program to increase collaboration between industry and relevant universities and provide industry - based training for graduates
- Providing a Skills Development Fund to help workers and school leavers obtain new skills

Private Sector and Innovation-Led Growth in Malaysia

The government will also alter its role by:

- Strengthening its role as a policymaker and independent regulator as the private sector increases its participation in the economy
- Extending opportunities for private sector investment to include the delivery of front-line public services
- Transferring non-core operating functions to the private sector to improve outcomes and lower costs, and also reducing government ownership in selected companies and provide companies with a level playing field to facilitate private-sector competition
- Establishing *InnovationMalaysia as a unit responsible for overseeing innovation initiatives to improve R&D and* promote production of intellectual properties

Use of Modern Technology in Education in Gujarat

Computer Aided Learning (CAL)

- To make the Students and Teachers familiar with Computers
- To teach the subjects through computers
- To use the educational software for hard spots in the curriculum
- To enable the students in government school, especially in rural areas, to be at par with the urban and private school students

Existing eLearning Labs

Project Name	No. of Labs	Year of Implementation	Model	Classes covered
SSA-CAL Primary	20,502	2005 to 2011	BOOT (Educomp, IL&FS, NIIT, HCL etc)	VI to VIII

Child Tracking System

- Need for child tracking with unique identification:
  - Earlier there was no system to track child dropout from the Education System
  - RTE Act 2009 mandates to keep record of primary education of each student
- Aadhaar UID concept adopted to build database of students and to provide unique identification number to all the students
- A project named as **Aadhaar Enabled DISE** launched in December 2012 for child tracking in the context of retention and assessment of learning outcomes
- Aadhaar Enabled DISE is a web based application
- 87 Lac students covered under the system during 2013-14 and 4 Lac students tracked during school transfer

Migration Monitoring System

- Tracking of children of migrating parents through a software
- Online Migration Monitoring System developed to track & monitor migrating students from one cluster/ block/ district/ state to other cluster/ block/ district / state and to enroll them in schools
- Migration Monitoring System is envisaged to reduce the drop out rate and improve the quality of education.

Other Online Applications

Biometric Attendance and Computer Aided Learning (BACAL)

- Use of Biometric Technology to capture attendance of Teachers, Students & Administrative Staff
- Enable Computer Aided Learning System by providing Education Software
- Data available online in public domain to increase transparency

Project Status

- Implemented in about 7100 schools in tribal areas of the state
- Daily email generated and sent to concerned officials
- Scheme helping in monitoring the attendance of teachers, students and other officials (CRC/ BRC/ MDM Staff etc.)

Other Online Applications

Tracking of Out of School Children

- To maintain online records of all out of schools children.
- To track the covered children through Special Training Program.

GIS School mapping

- Actual location of each school (Latitude and Longitude) taken using Google Earth application
- School location marked as School DISE Code and also nearest famous place marked
- Mapping of schools, CRC, BRC, Cluster Boundary in GIS environment
- Distance of Primary School within 1 km and Upper Primary School within 3 km tracked as per RTE Act.

Computerized Teachers Transfer Project

- Transfer of Primary Teachers through Computerized transfer system
- Started on pilot basis in four districts - Gandhinagar, Ahmedabad, Porbandar and Sabarkantha.
- Teachers can apply online for transfer within their respective district.
- The software accept or rejects their application depending on the government criteria for transfers, viz. seniority, vacancies, numbers of years of service etc.
- Online transfer order issued to teachers
- Very transparent and convenient system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Thank You
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Home
Page Down
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Shift