Business opportunities for Taiwan companies in Smart Cities in West Bengal

Debashis Sen, IAS
Additional Chief Secretary
Department of Information Technology and Electronics, Government of West Bengal
Why Bengal?

A look into the strategic reasons that make West Bengal good for business
Looking into Bengal’s value proposition in a snapshot...

**Infrastructure**
- Expenditure on physical infrastructure increased more than 3.6 times in last 7 years.
- Creation of IT infrastructure has increased by more than 16 times in the last 7 years with a total outlay of USD 41.12 millions in 2016-17.
- 1000 Youth Computer Training Centres made operational under PPP mode.
- Best in the country in terms of power, quality, availability and distribution.

**Industry**
- Timelines mandated for every service related to the inception of MSME and Large Industry Businesses.
- Bengal Silicon Valley project set up on 200 acres land, is Eastern India’s largest IT Hub.
- A comprehensive online GIS portal has been created to give detailed geographical information about Industrial Parks and estates.
- State services GVA (at current prices FY ’17-18) of 18.20%, significantly higher than national industrial GVA growth of 11.7%.

**Social**
- Kanyashree Prakalpa was honoured the 1st Prize in United Nations Public Service Award 2017.
- No. 1 in the country employing women in MSMEs, contributing over one-sixth of the national female employment in the sector.

...and identifying the key enablers!

<table>
<thead>
<tr>
<th>Why Bengal?</th>
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<tbody>
<tr>
<td><strong>Zero</strong> hour power outage</td>
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<tr>
<td><strong>Zero</strong> man day loss in last 5 years</td>
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<td><strong>Very low</strong> attrition rate (3%)</td>
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<th>Growth engine</th>
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<td>Best in the country in terms of power, quality, availability and distribution</td>
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<td>Excellent 4G connectivity</td>
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<tr>
<th>Robust infrastructure</th>
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<tr>
<td>Higher than national average road density</td>
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<tr>
<td>Richly endowed with natural maritime advantages</td>
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<tr>
<td>2 International Airports – Kolkata and Bagdogra</td>
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<th>Strategic location</th>
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<tr>
<td>Gateway to South-East Asia and North-East India</td>
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<td>Well connected with the booming hubs of Asia such as Singapore, Thailand, Malaysia, Taiwan.</td>
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<th>Rich talent pool</th>
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<td>Home to rich talent pool. World-class educational institutes such as Presidency University, IIT, IIIT, ISI, IIM, IIEST, JU.</td>
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<td>To name a few renowned people and their connection with Bengal can be noted – Nobel laureate in Economics this year, Shri Abhijit Vinayak Banerjee is from Kolkata and studied in Presidency College. Google CEO, Shri Sundar Pichai studied in IIT Kharagpur</td>
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http://www.millenniumpost.in/business/kolkata-to-overtake-mumbai-as-nations-financial-hub-272727
Reliance has invested Rs15,000 crore in West Bengal, says Mukesh Ambani

Mukesh Ambani says Reliance Industries will invest further Rs5,000 crore in West Bengal in businesses such as petroleum, retail in next three years.

Reliance Industries Will Invest ₹ 5,000 Crore In Bengal: Mukesh Ambani

Speaking at the Bengal Global Business Summit, India's richest man paid lavish compliments to Chief Minister Mamata Banerjee saying that under her leadership “West Bengal is becoming Best Bengal!”

Reliance Industries to Invest Rs 5,000 crore in West Bengal to boost Jio, retail and fuel business

By Kalyan Purkayastha, ET Bureau | Updated: Jan 16, 2018, 11:31 PM IST
Bengal means Talent

Why Kolkata?

For us the big attraction was that ISI (Indian Statistical Institute) was in Kolkata. We were building an analytical product for which we needed statisticians. I feel if you need to develop a technology product then you should do it in Bangalore or Hyderabad,” said Sanjoy, adding, “But for a blend of product developers and statisticians, Kolkata was the best option. The cost of living and attrition rate is lower so we can keep our costs down and quality high as well.”

Tech Bengal: The Land of Emerging Technologies

By Elets News Network

Posted on May 14, 2019
West Bengal is rising

Permanent employment (numbers)

Export (USD million)
Kolkata – India’s third richest city

- Capital of West Bengal, once National Capital in British India
- Regarded as “Cultural Capital” of India, also called “City of Joy”
- Estimated GDP of $150.1 billion
- 3rd Richest city in South Asia after Mumbai & Delhi
- House to many Indian corporates (Coal India Ltd, Britannia Industries, ITC Ltd., PwC India, Damodar Valley Corporation, Haldia Petrochemicals etc.)

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<tr>
<th>Richest Indian Cities</th>
<th>GDP (Purchasing Power Parity), $ billion</th>
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<tbody>
<tr>
<td>Mumbai</td>
<td>310</td>
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<tr>
<td>Delhi</td>
<td>293.6</td>
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<tr>
<td>Kolkata</td>
<td>150.1</td>
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<tr>
<td>Bengaluru</td>
<td>110</td>
</tr>
<tr>
<td>Chennai</td>
<td>78.6</td>
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<tr>
<td>Hyderabad</td>
<td>75.2</td>
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<tr>
<td>Pune</td>
<td>69</td>
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<tr>
<td>Ahmedabad</td>
<td>68</td>
</tr>
<tr>
<td>Surat</td>
<td>59.8</td>
</tr>
<tr>
<td>Vishakhapatnam</td>
<td>43.5</td>
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Physical infrastructure

A look into few sites that an investor may consider
Bengal Silicon Valley Hub is emerging as the epicentre of emerging tech

- Land plots available at hugely concessional rate (~25% of the market price) @ USD 0.64 Million per acre (approx.)

- **State of the art Data Centres** are being set-up by leading tech-led organizations - **Reliance and Airtel**

- **Strategic location** – ~10 minutes away from Kolkata International Airport
Sonarpur hardware park

- Boundary wall & internal street lighting available
- 24 hours filtered potable water available
- Uninterrupted full power supply
- 24x7 Security
- Internal concrete roads, dedicated walkway & car parking.
- Common drainage system, common utility & water supply network.
Electronic clusters at Naihati and Falta

**Naihati**
- Set up on 70 acres of Government owned land
- Excellent rail & road infrastructure
- Availability of abundant water & electricity
- 30 kilometres from international airport
- Within 15 kilometres of technical education hub

**Falta**
- Located on the banks of River Ganga
- Well connected to Haldia Port (27 Kms)
- Container handling jetty
- Set up on 60 acre government owned land
- Quality & stable power supply
- Adequate social infrastructure
Opportunities in Smart cities in Bengal

An exciting new vista
New Town Kolkata Green Smart City

New Town Kolkata Green Smart City aspires to leverage its existing and future investments to create a livable city that is economically vibrant and takes pride in itself.

Vision

Key Areas of Collaboration

- Improved Quality of Living
- Enhanced Mobility and Connectivity
- Creating Economic Opportunities
- Increased Safety & Security
Intelligent Urban Mobility System in New Town, Kolkata

**Areas of Collaboration:**
Requirement and Application in New Town, Kolkata

A. Intelligent traffic Management and public transportation system

B. Number Plate recognition technology especially to operate in limited connectivity area like basement parking, etc. along with multiple camera or sensors

C. Smart Interactive Real Time Display Boards at bus stops/ cycle stands and on-board (for buses)

D. Advance self service kiosk for bus tickets or smart parking
Areas of Collaboration: Requirement and Application in New Town, Kolkata

A. Intelligent In-vehicle Surveillance System
   ▪ Collection of intra-vehicular data (engine speed, improper braking, etc.)
   ▪ Real-time back-end data communication, data analysis and notification

B. In-vehicle predictive Artificial Intelligence to improve driving safety and prevent accidents
   ▪ Alerts for lane departure, collision, fatigue detection for drivers, blind spot detection, etc.

Artificial Intelligence Based Smart Road Monitoring Mechanism in New Town, Kolkata

Road Survey by dashboard camera atop vehicle, image processing and generation of report

Processed Image
Green Transportation in New Town, Kolkata: Introduction of E-Vehicles/ Non Motorised Transports

**Areas of Collaboration: Requirement and Application in New Town, Kolkata**

A. Innovation in E-Vehicles
   - Advanced E-Buses
   - Introduction of E-Scooters
   - Electric vehicle charging points with remote monitoring and interactive charging

B. Database building and integration for Bicycle Lanes

C. Innovation in Public Bicycle Sharing Schemes
Areas of Collaboration:
Requirement and Application in New Town, Kolkata

A. Advanced Renewable energy storage and Use
   - Integrating Renewable Energy solutions into existing and proposed infrastructure
   - Design components for Green Buildings
   - Intelligent and Adaptive lighting systems
   - Waste to Energy solutions

B. Monitoring and management of distributed solar power generation points
   - Real-time efficiency visualization
   - Analysis for quantum of power
   - Assessment of performance and loss

Integration of Renewable Energy Sources in New Town, Kolkata

LED Based Solar Street Lights along Link Canal in New Town
Areas of Collaboration: Requirement and Application in New Town, Kolkata

A. Smart Grid facility
   - Gateway conforming threshold values
   - Mechanism ensuring reliability and data accuracy
   - System to handle bulk data,
   - SCADA control or other mechanism to capture data,
   - Optimization of supply levels on the basis of SCADA feedback

B. Cloud enabled monitoring for water and waste water management

C. Designing rain water harvesting systems and water purification systems for mass adoption

D. Predictive Water Logging Solution
Areas of Collaboration:
Requirement and Application in New Town, Kolkata

A. Integrated solutions for a ‘Zero’ waste City
B. Drone based inspection for the infrastructure system
   - Real-time data processing
   - Interfacing with central monitoring system
C. Innovation for hundred percent coverage under ‘segregation at source’
D. Geo-tagging and Tracking of Collection and disposal vehicles

Integrated Solid Waste Management System in New Town, Kolkata

Composting Unit in New Town
Smart Public Conveniences in New Town, Kolkata

Containerized Public Conveniences at multiple locations in New Town

Areas of Collaboration:
Requirement and Application in New Town, Kolkata

A. Monitoring Mechanism for Public Toilets through IoT solutions
   - Feedback devices, odour sensor, etc. and their integration

B. Maintaining Footpath Aesthetics
   - Cleaning and Greening of foot path
   - Maintenance of Street Furniture through IoT Solutions
   - Public Toilet locators
   - Wi-fi Network
Areas of Collaboration: Requirement and Application in New Town, Kolkata

A. Intelligent safety and security system with intelligent access control

B. Dynamic Public Navigation system with real-time wayfinding solutions

C. Emergency response system
   - Video surveillance & integration with central monitoring for ambulance
   - Provision for recording and live streaming (patients injury to be communicated to healthcare for treatment advices / prioritization approvals, etc.)
Sustainable Economic Opportunities in New Town, Kolkata

**Innovation Centre**

**Research & Development on:**
- 3D Printing
- Animation and Gaming
- Artificial Intelligence (AI) and Augmented Reality/ Virtual Reality (AR/VR)
- Machine Learning and Robotics
- Cybersecurity and Block chain
- Quantum Computing
- Chip Design
- IoT and 5G

**Services for the Micro, Small and Medium Enterprise (MSME)**

**Areas of Collaboration: Requirement and Application in New Town, Kolkata**

A. Digital and Physical Infrastructure for Innovation Centre
   - Cloud and digital services for hosting of developed applications
   - Cross-sectoral and governmental innovation lab involving citizens and businesses in creating new solutions for society,
   - Lab fitment with equipment such as 3D printers, CNC machines, prototyping tools etc.

B. Participate and drive corporate mentorship programs, Technology and Business Mentorship, Investor pitch support and fund raising consulting, Conducting Immersion Programs
**E- Governance in New Town, Kolkata**

**Municipal Administration & Governance System**

1. Municipal Transaction Processing System
2. Citizen Interface System
3. Municipal Monitoring & Evaluation System
4. Municipal MIS for delivering services
   - User charges
   - Building Permission
   - Grievance Redressal
   - Property Tax
   - Water Charges
   - Birth & Death Registration

**Integrated Command and Control System**

**Integration of Municipal Services:**

**Integration of Municipal Assistanaces/ Innovation/Other Works:**
24*7 helpline, AI based road monitoring system, LoRaWAN enabled streetlight, GPS enabled SWM system, tracking of street sweeping vehicle, Eco Park, etc.

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**Areas of Collaboration:**

**Requirement and Application in New Town, Kolkata**

- A. Real time wi-fi related user-activity monitoring and reporting; E-mapping of the devices
- B. Advanced embedded modules, befitting AI Computing Platform and better networking solutions
- C. Flexible and scalable configuration solutions
- D. Rugged solutions, dust proof, water proof, break/ drop resistant
- E. Integrated system monitoring especially for infrastructure system

- Real time equipment status monitoring
- Precise Navigation
- Notification Management
- Report Generation
- Asset Management optimization
- Prognostic Assessment
- Cyber security Measures
To sum up...India is rising in the global IT value chain...

Bengal will be the epicentre.

Talented manpower, government pro activeness, social infrastructure, connectivity all combine to make Bengal a suitable business destination.

You may visit: https://www.youtube.com/watch?v=nbFM37vrUtE&t=7s
Thank you

secit@wb.gov.in