Delivering **Value** Through **Innovation**

**Bringing Intelligence to Transportation Systems in**

**Abu Dhabi**

**Washington | California | Utah | Abu Dhabi | Saudi Arabia**
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Questions
Part 1: Turning Pebbles Into Diamonds

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Questions
Part 1: Turning Pebbles into Diamond

A Brief Description of Abu Dhabi

8456 Miles
Part 1: Turning Pebbles into Diamond

A Brief Description of Abu Dhabi

- Capital of the UAE
- Largest of the 7 Emirates
- Population of 921,000
- Generated 57% of GDP in 2011
- Oil Rich
Part 1: Turning Pebbles into Diamond

Rapid Development

Population Growth...

Emirati (Local)  Expatriate
Part 1: Turning Pebbles into Diamond

Rapid Development

Vehicle Growth…
Part 1: Turning Pebbles into Diamond

Rapid Development

Massive Urban Development...
Part 1: Turning Pebbles into Diamond

Rapid Development

Educational Facility Growth…
Part 1: Turning Pebbles into Diamond

Rapid Development

Cultural Growth…

Guggenheim

Louvre
Part 1: Turning Pebbles into Diamond

Rapid Development

Oversaturated Network…
Part 1: Turning Pebbles into Diamond

Rapid Development

Economic Growth is having an impact on Transportation as a whole...

This is what you think the challenge is?

Think Again!!
Part 1: Turning Pebbles into Diamond

Rapid Development

How Fast can this Economic Growth be...

IN A SINGLE GENERATION
Part 1: Turning Pebbles Into Diamonds

Part 2: Demand on Transportation Networks

Part 3: A Multi-Faceted Model for the Future

Questions
Part 2: Demand on Transportation Network

6 years ago there was...

- Only a limited bus service was available and only focused on Abu Dhabi City
- No other means of transport apart from Private Car and limited taxi service
- Fragmented approach to the delivery of a transportation network (City governed as opposed to rather than federally governed)
- Non-Sustainable / Environmentally unfriendly
- Lack of standards / poor adherence to what standards existed
- Non-Centralized Network Management
- Very little ITS (confined to Signals, a few CCTV cameras, Red Light Enforcement)
Part 2: Demand on Transportation Network

Interesting Statistics

- Estimated population by 2030 is 5 million (That’s an increase of approximately 550% in 18 years)
- The Population of Abu Dhabi is increasing by 1 person every 2 minutes and 48 seconds
- Abu Dhabi Economy is becoming stronger (for instance, the equivalent of $25 in 2002 would be $45 in today’s money)
Part 2: Demand on Transportation Network

Interesting Statistics

The 2030 Challenge…
Part 1: Turning Pebbles Into Diamonds

Part 2: Demand on Transportation Networks

Part 3: A Multi-Faceted Model for the Future

Questions
Part 3: A Multi-Faceted Model for the Future

Solution Started in 2007

Abu Dhabi 2030 Plan
Surface Transport Master Plan
ITS Strategy & System Architecture
Part 3: A Multi-Faceted Model for the Future

Surface Transport Master Plan

Vision for the Future

• 24 hours a day / 7 days a week availability of public transport with high-tech electronic information systems providing real time information on next train, bus or ferry

• Nearest public transport stop is less than a 5 minute walk from anyone’s home

• Streets are designed for pedestrians and cyclists (even in the heat!)

• Housing, jobs, shopping and entertainment destinations mingle close together and are easily accessible on foot

• A fine-grained, interconnected street system giving drivers a variety of routes to choose from and real time information on which route is optimal

• Parking is available and easily to find using Parking Guidance Systems
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ITS Strategy & System Architecture

“Build an Integrated, Coordinated, Multi-Agency and Multi Modal World Class Intelligent Transportation System (ITS) in support of the fulfillment of the safety, mobility and environmental needs of the Emirate of Abu Dhabi”
Part 3: A Multi-Faceted Model for the Future

ITS Strategy & System Architecture

- $400m in ITS Infrastructure over 10 years
- Multi-Modal Multi-Agency Approach
- Meets Abu Dhabi 2030 and STMP objectives
- 6 Service Packages and 28 Projects
- Comprehensive ITS Architecture
- Key project (ADTMC & ITS infrastructure)
Part 3: A Multi-Faceted Model for the Future

**ITS Strategy & System Architecture**

- Training of local specialists to support the infrastructure – Emiratisation
- Centralized ITS Delivery – Recognizing the disadvantages of a fragmented approach
- Performance led analysis of all ITS endeavors – Network Performance as opposed to Traffic Performance, an objective to Smooth Network Flow
- Non-intrusive Wireless infrastructure – where possible
- Impact of Urban Design on sustainable transportation
- Importance of robust data – for information dissemination, travel demand management, media links and marketing the success of TIS
- Multi-Agency colocation and coordination, and
- System Integration
Enablers

• White Canvas – Easier to build as you build your infrastructure rather than retrofit

• No political influences – One Ruler

• Oil Rich – The cash is there

• “2nd World Country” striving for 1st World Status – Drive to spend

• Hub for international experts – True International Best Practice
Part 3: A Multi-Faceted Model for the Future

The Solution

A series of Major Initiatives to deliver an ITS Strategy…
Part 3: A Multi-Faceted Model for the Future

Integrated Transportation Information & Navigation Services System (i-TINS)
Bluetooth Detectors for Trip and Speed Data
Part 3: A Multi-Faceted Model for the Future

Bluetooth Detectors for Trip and Speed Data
Part 3: A Multi-Faceted Model for the Future

Multi-Modal Transport Integration
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Active Traffic Management System
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Abu Dhabi Road Service Patrol
Part 3: A Multi-Faceted Model for the Future

Abu Dhabi ITS - ADITS

- Single Platform for the integration of multiple systems
- Open Architecture – As far as is practical
- One GUI – Across multiple Operational Control Centers
- True Multi-Modal / Multi-Agency Integration:
  - Decision Matrix across multiple modes of transport
  - Incident Management across multiple agencies
  - Information Dissemination across multiple means (Social Media, Media, Mobile SMS etc...)
Part 3: A Multi-Faceted Model for the Future

Abu Dhabi Transportation Management Center
Part 3: A Multi-Faceted Model for the Future

The Solution

Will Ultimately provide…

- Service to all destination
- Transport for all
- Public transport as an attractive choice
- Provisions for pedestrians
- Transit oriented developments
- Safety Improvements
- Integrated Multi-Modal System
- Multi Agency Coordination
- Statewide Network Management
- Urban and Freeway Management under one roof
Bringing Intelligence to Transportation in Abu Dhabi

QUESTIONS