



# EGM on Enabling Environment for the Development of Arabic e-Services

**Beirut, 8-9 March, 2011**

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# Agenda



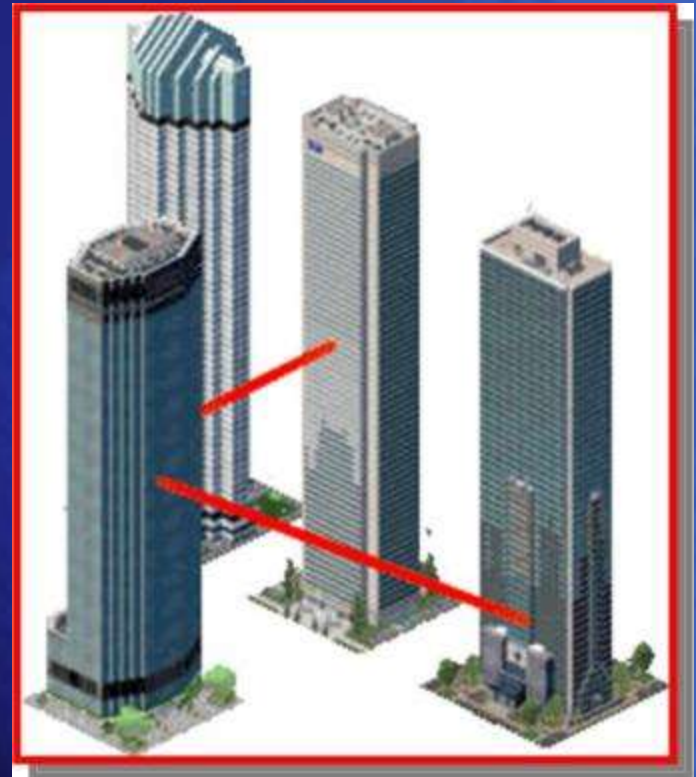
- **Functionality and Benefits of FSO**
- Network Applications
  - Communities
  - Health
  - Education



## Benefits of FSO



- No Licensing
- No Spectrum issues
- No Interference
- No Digging
- No Deployment Delays
- Enhanced security



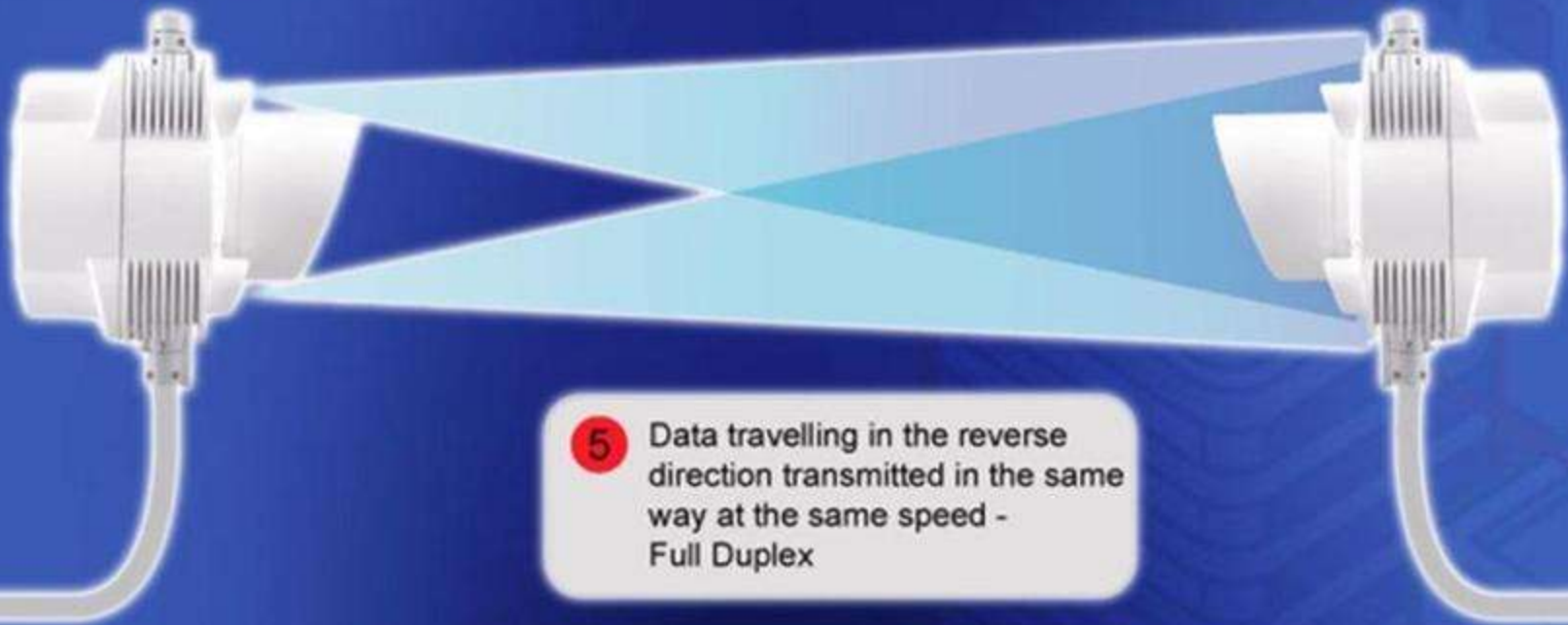


# FSO Transmission



**2** Transmitter projects the carefully aimed beam of light through the air

**3** Receiver on the other end collects the light using lenses/mirrors



**5** Data travelling in the reverse direction transmitted in the same way at the same speed - Full Duplex

**1** Network traffic converted into pulses of invisible light representing 1's and 0's

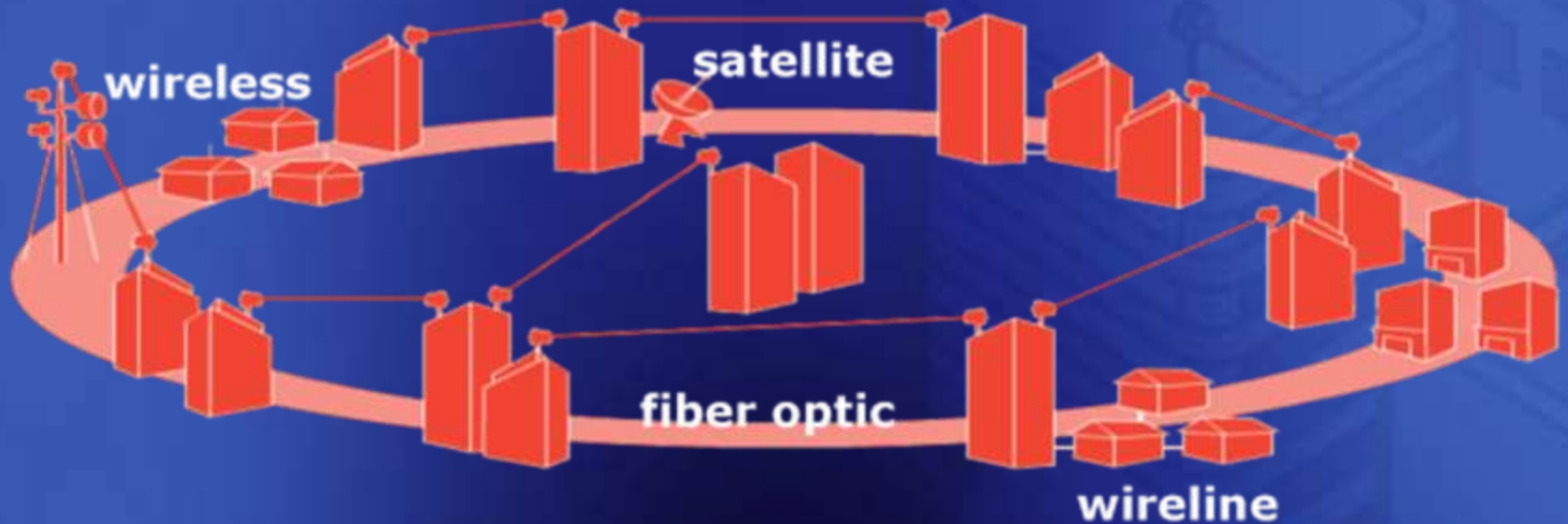
**4** Received signal is converted and send over fiber or copper connected to the network



## Key Benefits of SONAbeam™



- **Connects to nearly any existing network** – voice, data, video
- **Longest range FSO product** – 1550nm, 4 \* Tx, 1 large Rx
- **Most durable / reliable FSO product** – cast aluminum, hardened
- **Most secure FSO solution** – 1550nm





**SONABEAM™**



## SONAbeam™ – Latest Generation Optical Wireless



SONAbeam™ M Series



SONAbeam™ E Series



SONAbeam™ Z Series



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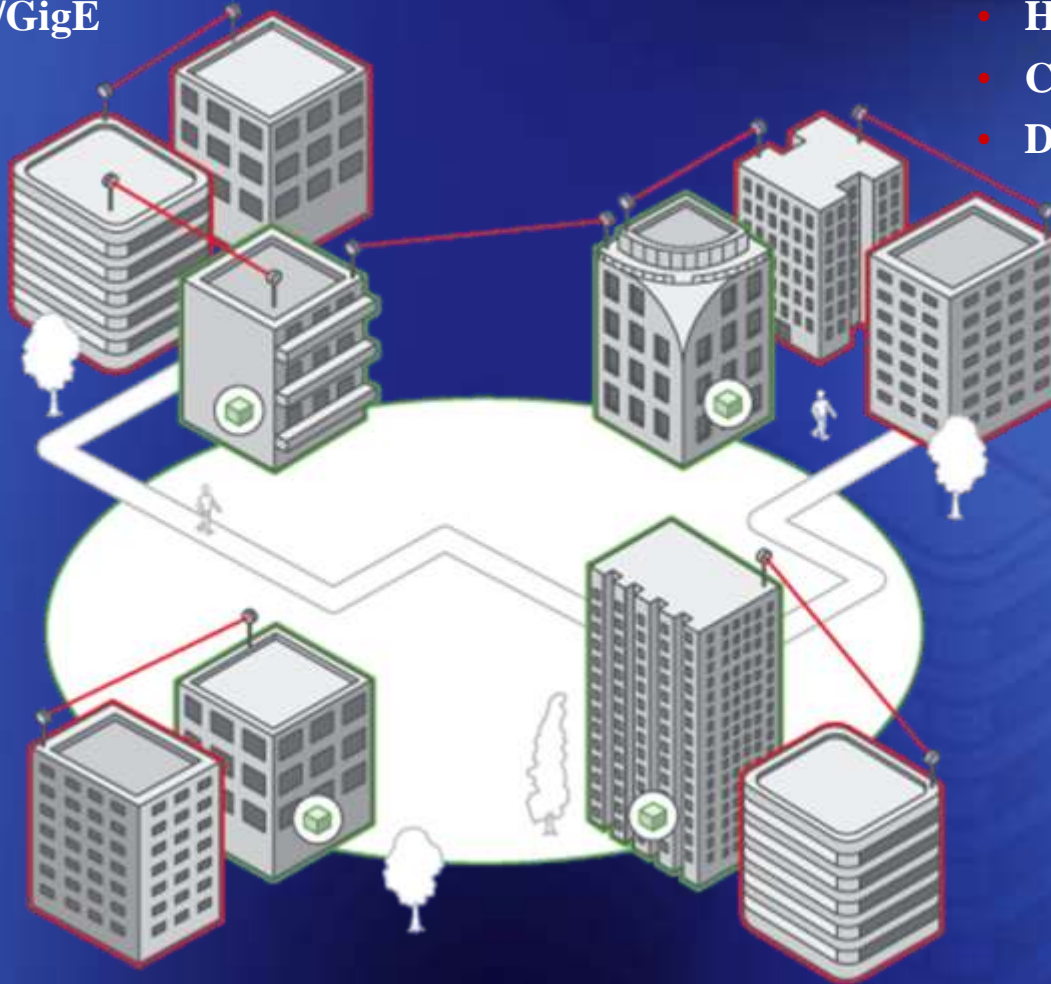


# Metro Ring / Last Mile



- **STM1/STM4, FastE/GigE**
- **Low Cost**
- **Rapid Deployment**

- **High Availability**
- **Carrier Class Design**
- **Daisy Chain**





# Progressive Networks WiFi Wireless Backbone, Belfast, UK



## Goal:

- Deliver broadband triple-play cost effectively for up to 7,000 endpoints in a disadvantaged community in Northern Ireland

## Solution:

- SONAbeam™ FSO links combined with 802.11b radios provide broadband access to schools, businesses and residential users

## Benefits:

- Wireless backbone was installed quickly and is maintained by community. Cost-effective units also have no recurring monthly fees.





## Rebuilding Belfast with Broadband



*“We chose free space optics because, with it, we did not need to dig up the streets and pay high annual charges for leased lines or license fees. There is no radiation risk and the network could be up and running quickly.”*

The Flax Trust’s vision is a network that connects businesses with their customers, as well as churches with their parishioners and schools with their students. In addition to creating vital communication links, the network will provide much needed job training and jobs for the residents of North Belfast. [March/April 2003 Issue](#)



## Istanbul, Turkey



### Goal:

- Establish a high-speed wireless backbone network to deliver competitive services to Istanbul's busiest business sector

### Solution:

- Omnitek used the SONAbeam™ 1250 series to build the first Gigabit Wireless backbone network in the world

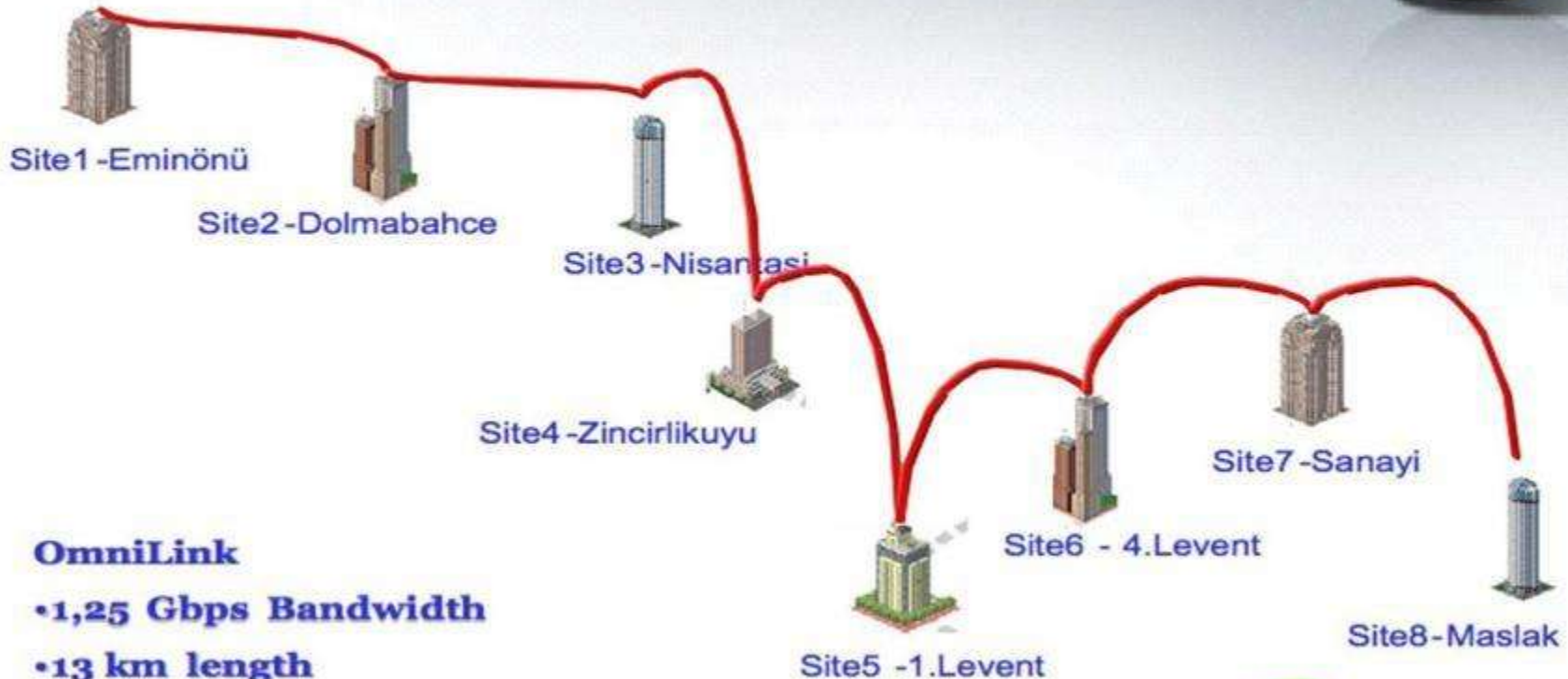
### Benefits:

- SONAbeam's unlicensed technology is ideal for competitive carriers. Gigabit plus speeds and rapid deployment allow Omnitek to respond quickly to the growing needs of Turkey's business district





## OmniLink Network



### OmniLink

- 1,25 Gbps Bandwidth
- 13 km length
- 8 hop points



## Port Louis, Mauritius



- Established optical backbone to distribute satellite feed to business customers such as commercial banks
- SONAbeam™ 1250-M Gigabit system provides rampable bandwidth
- Rapidly deployed, high-speed solution is flexible and can be redeployed if customers move





## Riyadh, Saudi Arabia

- An ISP wanted to establish high-speed wireless service from one central point to other key locations in an extreme environment - up to 50°C with sand storms.



- Initial deployment of 12 SONA-beam™ Fast Ethernet links. More links will added as needed.



- SONAbeam™ shines in challenging conditions. No outages during major sandstorm of 2003



## Temporary Capacity - Broadband Wireless World Forum



Grand Hyatt, Union Square



San Francisco, CA



Moscone Center

**Zero bit or transmission errors over 6 days of transmission (Video, FTP, Video Conferencing, and BERT) through heavy rains, mists, winds and windows.**



## Media / Broadcast Toronto, Canada



- Production house connectivity via proprietary media network for transfer of "dailies" to Hollywood, CA
- SONAbeam™ 155-M combines very high bandwidth and low latency making it an ideal wireless solution for video transmission
- Able to operate through windows, able to be deployed rapidly







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# High Speed Networks for Healthcare



- **Supports healthcare practices that require high-speed networks:**

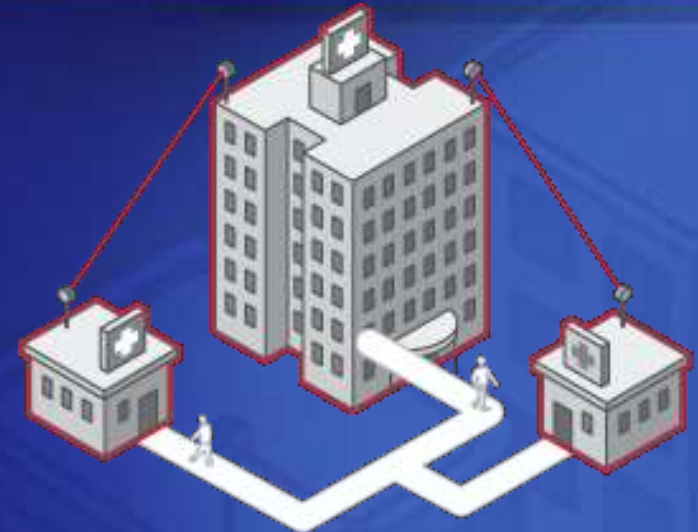
- Telemedicine
- Telehealth
- Records Storage
- Medical Education & Training
- Grid Computing

- **Benefits:**

- Rapid transfer of images
- Information available when and where required
- Network overlay eliminates congestion on existing network

- **Features:**

- Secure
- High Bandwidth
- Low latency
- Reliable/Available
- No EMI



**Medical Imaging Site**



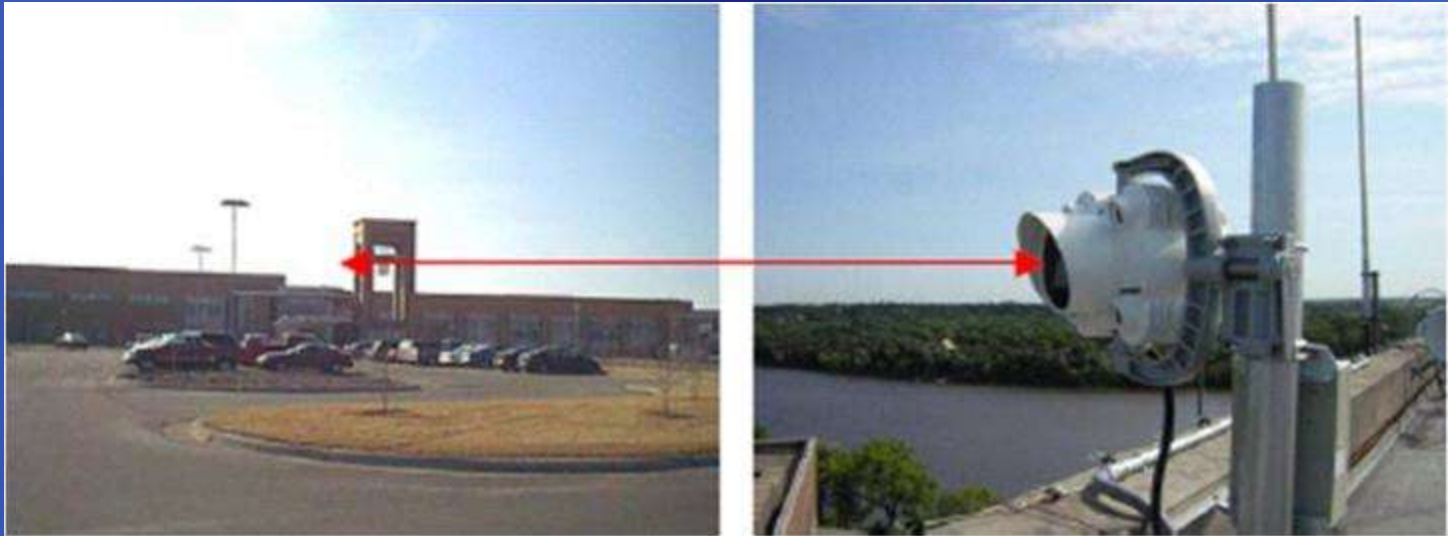
## Kuwait Ministry of Health

**Citywide high-capacity wireless network (combination FSO and microwave) linking clinics and hospital sites to transmit medical data, including bandwidth intensive X-ray and CAT Scan images.**





# SAN – St. Cloud Hospital, MN



CentraCare Health Plaza Clinic, St. Cloud, MN

St. Cloud Hospital, St. Cloud, MN

- Created offsite SAN mirror for St. Cloud Hospital's data center at CentraCare Health Plaza Clinic which is located 3.08km away.

- SONAbeam 1250-M provides full duplex GigE connection required.



## Healthcare High-Speed Networks - Ellis Hospital, Schenectady, NY



- Secure
- High Bandwidth
- Low Latency
- Reliable/Available
- Rapid ROI



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# Education Networks



- Eliminates monthly Telco costs
- Excellent solution for voice, data & video
- Full rate / full duplex optical performance
- Faster than RF
- Aggregate campus Wi-Fi traffic





## Dublin City University



- Replace failing 802.11 radio that was only available 80% of the time due to rain outages
- SONAbeam™ 155-M was installed at 2.7km. They now plan to link the whole campus.
- In addition to increased availability, SONAbeam™ is able to provide a very high-speed network that always provides full bandwidth.







## University of Toronto



- Connect two remote offices, one permanent and one temporary at Gigabit speeds
- SONAbeam™ 1250-S and SONAbeam™ 155-S
- **High capacity connectivity at a cost-effective price.**





Thank You!