

# OZ Optics Limited – Turkey

## Corporate Overview

### OZ Optics Limited - Turkey

May 2016

# Agenda

- Company Profile
- OZ Optics Canada
- OZ Optics Turkey
- OZ Optics China
- Manufacturing Strategy
- Industry Standards
- Core Competencies
- Quality Policy
- Competitive Advantage

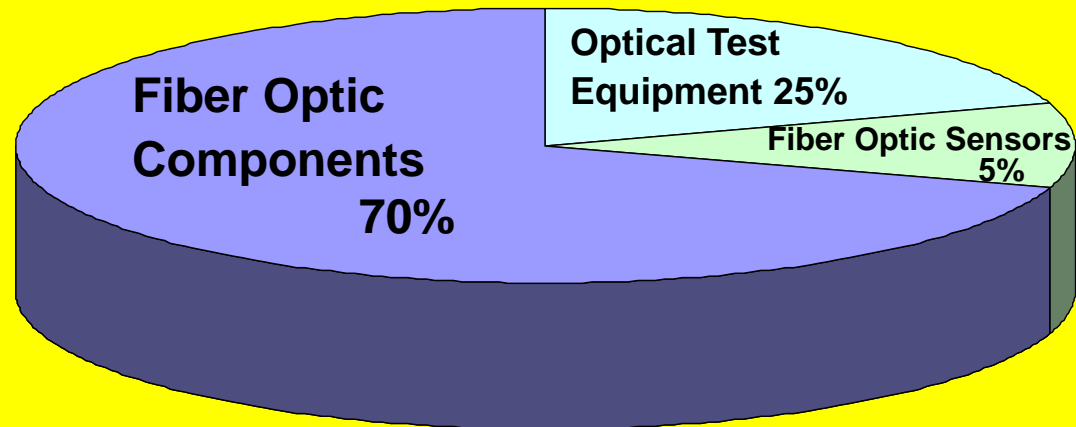
# Company Profile

- Company founded in 1985;
- Corporate headquarters located in Ottawa, Canada;
- Manufacturing facility in Ottawa/Canada, Izmir/Turkey, and Jiaxing/China
- Seven Product Groups: **Laser-to-Fiber Delivery Systems, High Power Fiber Optic Components, Polarization Maintaining Products, Attenuators, Opto-Electronic Packaging, Test Equipment, Fiber Optic Sensor Systems**
- Sales offices in Canada, USA, Turkey and China



# Company Profile

## ➤ Three Product Groups:



- Over 1,000 products
- Leading Edge R&D

# OZ Optics Products



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Global Leader in Fiber Optic Products since 1985

## Polarization Maintaining Fiber Optic Components

Patent Numbers: USA 7058275, 7095931, 7295731, China 1672073



Polarization Maintaining Connectors / Patchcords

Polarization Maintaining and Polarizing Splitters / Combiners / Fused Couplers / Switches

All Fiber Manual and Electrically Driven Polarization Controllers / Scramblers

PM Fiber Directional Taps / Power Monitors

Manual / Electrically Controlled PM Fiber Pigtailed Variable Attenuators

Fiber Pigtailed Polarizers

PLC Splitters

PM Fiber Pigtailed Circulators



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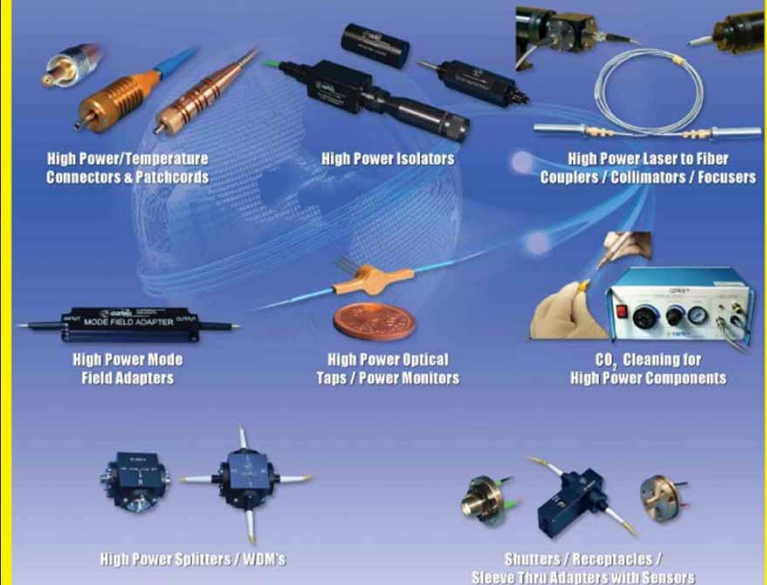
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## High Power Fiber Optic Components

Patent Numbers: Canada 2494133, USA 7058275, 7095931, 7295731, China 1672073



High Power/Temperature Connectors & Patchcords

High Power Isolators

High Power Laser to Fiber Couplers / Collimators / Focusers

High Power Mode Field Adapters

High Power Optical Taps / Power Monitors

CO<sub>2</sub> Cleaning for High Power Components

High Power Splitters / WDM's

Shutters / Receptacles / Sleeve Thru Adapters with Sensors



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# OZ Optics Products



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## Fiber Optic Attenuators for SM, PM, and MM Fibers

### Digital Variable Attenuators



- 0.01dB Resolution, Fast Response
- 0.001 to 100dB Attenuation Range
- 100mW Max

### Electrically Controlled Variable Attenuators



- 0.01dB to 100dB Attenuation Range
- Up to 2 Watts Power Handling
- PC Based, Analog and Digital Control

### MEMS Variable Attenuators



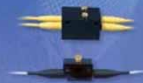
- 0.01dB to 40dB Attenuation Range
- Small Size, Low Cost, Low Power Consumption
- Low Wavelength Resonance, Low Crosstalk

### SM / PM / MM Fiber Pigtailed Inline Variable Attenuators



- 0.01dB to 100dB Attenuation Range
- 500mW Power, 200 Wavelength Response
- 0.01dB PDL, 0.01dB Return Loss Specifications

### Single/Multi Channel Miniature Variable Attenuators



- Compact, Less Than 5mm Spacing Between Fibers
- Designed for Multiple Fiber Arrays
- PC Based, Monolithic

### Reflective Style Variable Attenuators



- 0.01dB to 60dB Attenuation Range
- 0.01dB PDL
- 40dB - 50dB Backreflection

### Air Gap Variable Attenuators



- 0.1dB to 10dB
- 100mW Power, 200 Wavelength Response
- 0.01dB PDL, 0.01dB Return Loss

### Plug Type Fixed Attenuators



- 0.1dB to 10dB
- 100mW Power, 200 Wavelength Response
- 0.01dB PDL, 0.01dB Return Loss

### Attenuating Fiber Patchcords



- 0.1dB to 10dB Attenuation Range
- 100mW Power, 200 Wavelength Response
- 0.01dB PDL, 0.01dB Return Loss
- 40dB - 50dB Backreflection



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## Laser & Laser Diode to Fiber Delivery Systems



Laser to Fiber Couplers



Bare Fiber Adaptors with Magnetic Clips



Bulkhead Receptacles



Pigtail/Receptacle Style High/Low Power Collimators/Focusers



High/Low Power Patchcords



WDM/RGB Combiners



OCT Modules and 2 micron Components



OEM Laser Diode to Fiber Couplers



Turnkey, Ultra Stable Laser Modules



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## Fiber Optic Components for Optoelectronic Packaging

Hermetically Sealable Patchcords with Glass or Metal Solder



Single Channel

Multi Channel

Metalized Fibers

PM/SM/MM Fiber Pigtailed V-Groove Arrays

Polarization Measurement System for V-Grooves

Tapered / Lensed Fiber Polished / Laser Shaped

Glass Solder Preforms

Fiber Optic Ferrules



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## Fiber Optic Test Equipment



Polarization Extinction Ratio Measurement Systems

Power Meters with Smart Detector Heads

Broadband Digital Variable Attenuators

Optical Fiber Length Meters

High Power Visual Fault Locators  
Fiber Optic Stable Sources

Inline Optical Power Monitors/Meters

Laser Diode Sources  
Single/Multiwavelength

Fiber Optic Smart Patchcords

Fiber Optic Fault Finders



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# Product Innovation



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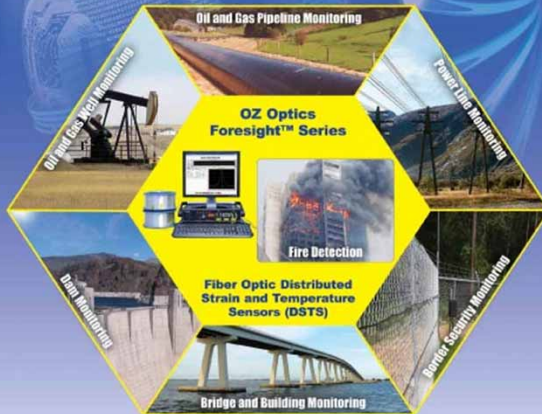


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## Fiber Optic Distributed Strain and Temperature Sensors

USA Patent Numbers: 7499151, 7599047

- BOTDA only, BOTDR only, or both BOTDA and BOTDR modules in one unit
- Simultaneous measurement of strain and temperature
- Fast, dynamic measurement of strain and/or temperature up to 100 km sensing range
- Uses standard telecommunication fiber to minimize costs



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## Fiber Optic Fault Finder for Optical Network Safeguard™

- Monitors and reports network health status in real time, 24 hours/day, 365 days/year
- Lowers network operating and maintenance expenses
- Reduces revenue loss due to fiber plant outages
- User friendly interface via various wireless interfaces (Wi-Fi, GPRS), USB, or RS-232
- Reports fault location, giving GPS coordinates with time stamp
- Early alert and outage reports via cellular phone, email, IM, SMS, or text messaging



OZ Guard Automated Test Solution



Remote Monitoring a WDM Network



Remotely Accessible/Wireless Fault Finders



GPS Locator



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# Product Innovation



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## 2 micron Fiber Optic Components for PM and SM Fibers

Fiber Optic Patchcords

Fused Couplers / Taps /  
Beam Splitters / Combiners

Fiber Pigtailed  
Laser Diode Sources

Pigtail / Receptacle Style  
Collimators / Focusers

Polarizers

Manual / Electrically Controlled  
Variable Attenuators

Isolators



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## Fiber Optic Products for OCT Applications

OCT Modules

Manual / Electrically Controlled  
Broadband Variable Attenuators

Manual / Electrically Controlled  
Fiber Optic Delay Lines

Manual / Electrically Controlled  
Polarization Controllers

Fiber Pigtailed  
Broadband SLED Sources

Fiber Collimators / Focusers

Broadband Fused Couplers



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# Company Profile

Over 470 employees worldwide:

- 260 in Ottawa and US
- 50 in Turkey
- 160 in China

OZ Canada



OZ China



OZ Turkey

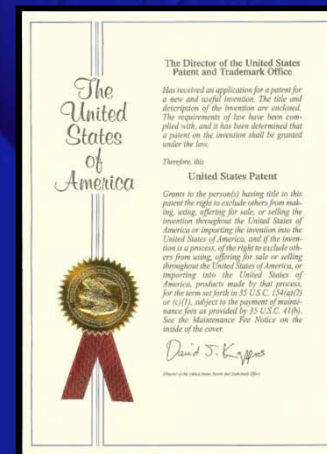
# Company Profile

*OZ Optics is lead by an experienced team:*

- **Ömür Sezerman, Chairman, President & CEO**
  - Founder and CEO since inception (31 years)
- **Zahide Sezerman, VP of Human Resources**
  - With OZ Optics since inception (31 years)
- **Garland Best, VP of Components Division**
  - 24 years at OZ Optics
- **Gordon Youle, VP of Test Equipment Division**
  - 17 years at OZ Optics
- **Martin Powell, Operation Manager**
  - 12 years at OZ Optics
- **Sarah Miller, Controller**
  - 3 years at OZ Optics
- **Metin Sezerman, General Manager of OZ Turkey**
  - 15 years at OZ Optics
- **Bing Li, General Manager of OZ Optics China**
  - 12 years at OZ Optics

# Company Profile

- ISO9001:2008 certified
- Broad patent portfolio
- Advanced proprietary processing technology



# Company Profile

➤ *Using our strong direct sales and distributors, we address the following markets:*



# Company Profile

➤ *OZ Optics has resellers and distributors in over 30 Countries & Regions and over 10,000 customers globally:*



# In-House Production Capabilities

- Experienced and well-trained staff in following fields:
  - optical, mechanical, electronics & software

CNC Machine Shop



AR Coating



Femtosecond Laser Lab



Clean Room



Laser Conditioning/Cleaving



# Branch Network



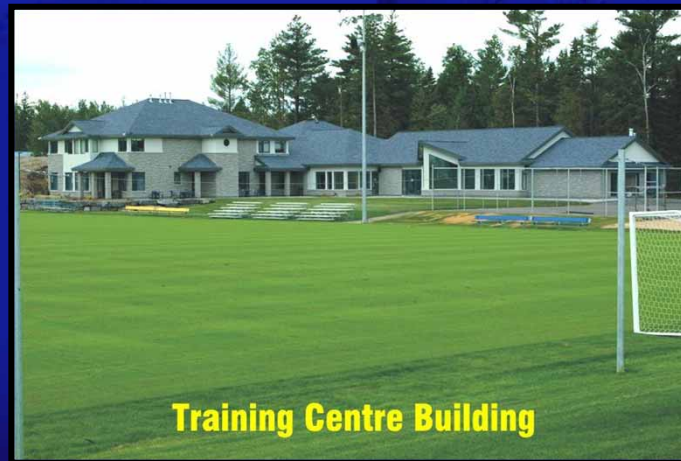


# Facility – Ottawa Headquarters

- 60,000 sq ft. – Manufacturing and R&D Facilities
- 15,000 sq ft. – Admin, Sales and Marketing
- 15,000 sq ft. – Training and Fitness Facility
- R&D, Product Design, Engineering, Final Assembly & QA



# Facility – Ottawa Headquarters



# OZ Optics China

- Operational since 2009
- Wholly Foreign Owned Enterprise
- Subcomponent Parts Manufacturing
- Cost Effective Manufacturing
- High Quality Labor
- Extensive Training  
( 3-6 months in OZ Canada)



# OZ China Facility

## Jiaxing, China

- Located in Economic Development Zone
- 500 sq meters – Admin, Sales and Marketing
- 1500 sq meters – Manufacturing Area
  - 100 sq meters – Class 10,000 Clean Room
  - 100 sq meters – ESD Working Area



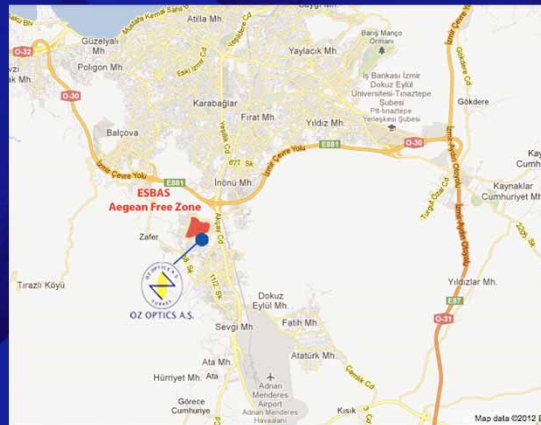
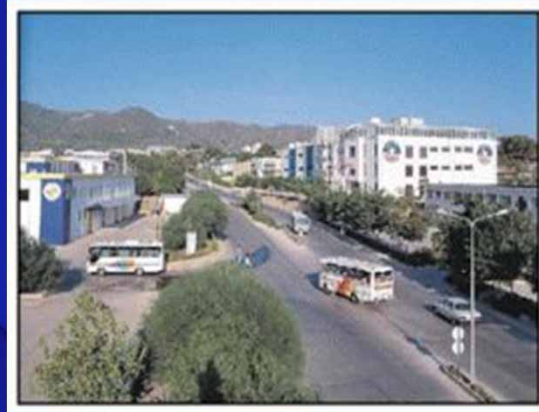
# OZ Optics – Turkey Factory

- Operational since 2000
- 33,000 sq ft. Manufacturing Facility
- Located in Free Trade Zone
- Low Tax Rates
- Sub Component Parts Manufacturing
- Cost Effective Manufacturing
- High Quality Labor



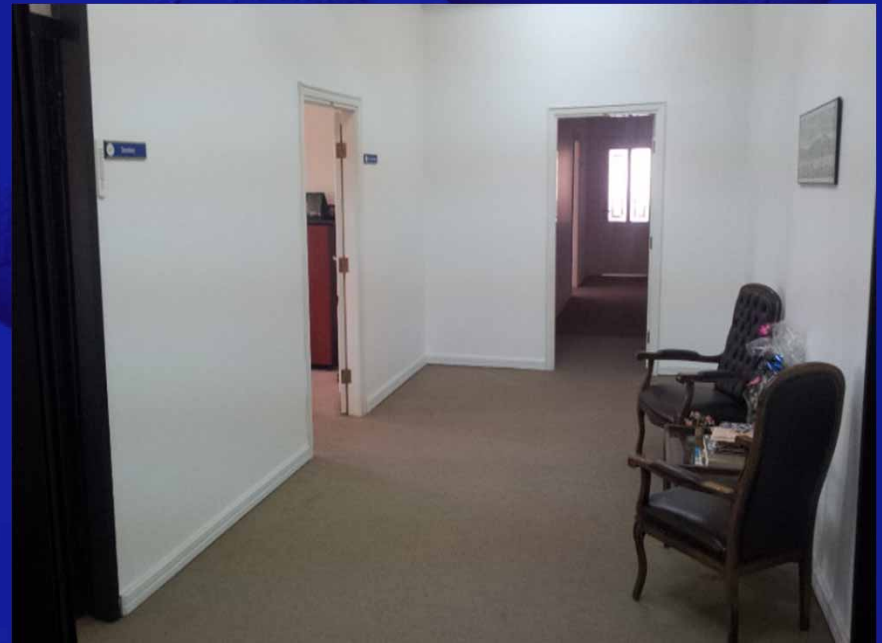
# Why We Chose Izmir

- **Izmir Harbour and Airport**
- **Convenient Transportation**
- **Foreign Trade Advantages in Aegean Free Trade Zone**
- **Cost Effective Manufacturing**
- **High Quality Labour Pool**
- **Location Advantages**
- **Beautiful Scenery & Pleasant Climate**



# OZ Optics A.S Turkey – Izmir

- **Incorporated in May 2000**
- **First fiber optic products manufacturing company in Turkey**
- **Equipment and High quality machines set-up**
- **Machine Shop**
- **Commenced Operations in Sept. 2001**
- **OZ Turkey Engineers and Employees had been trained in various departments in OZ Canada**
- **More than 10 years production experience**



# OZ Optics A.S Turkey – Izmir



High volume production capacity

Experienced Production Employees

Senior engineers from OZ Canada sent to OZ Turkey for on-site training and evaluation

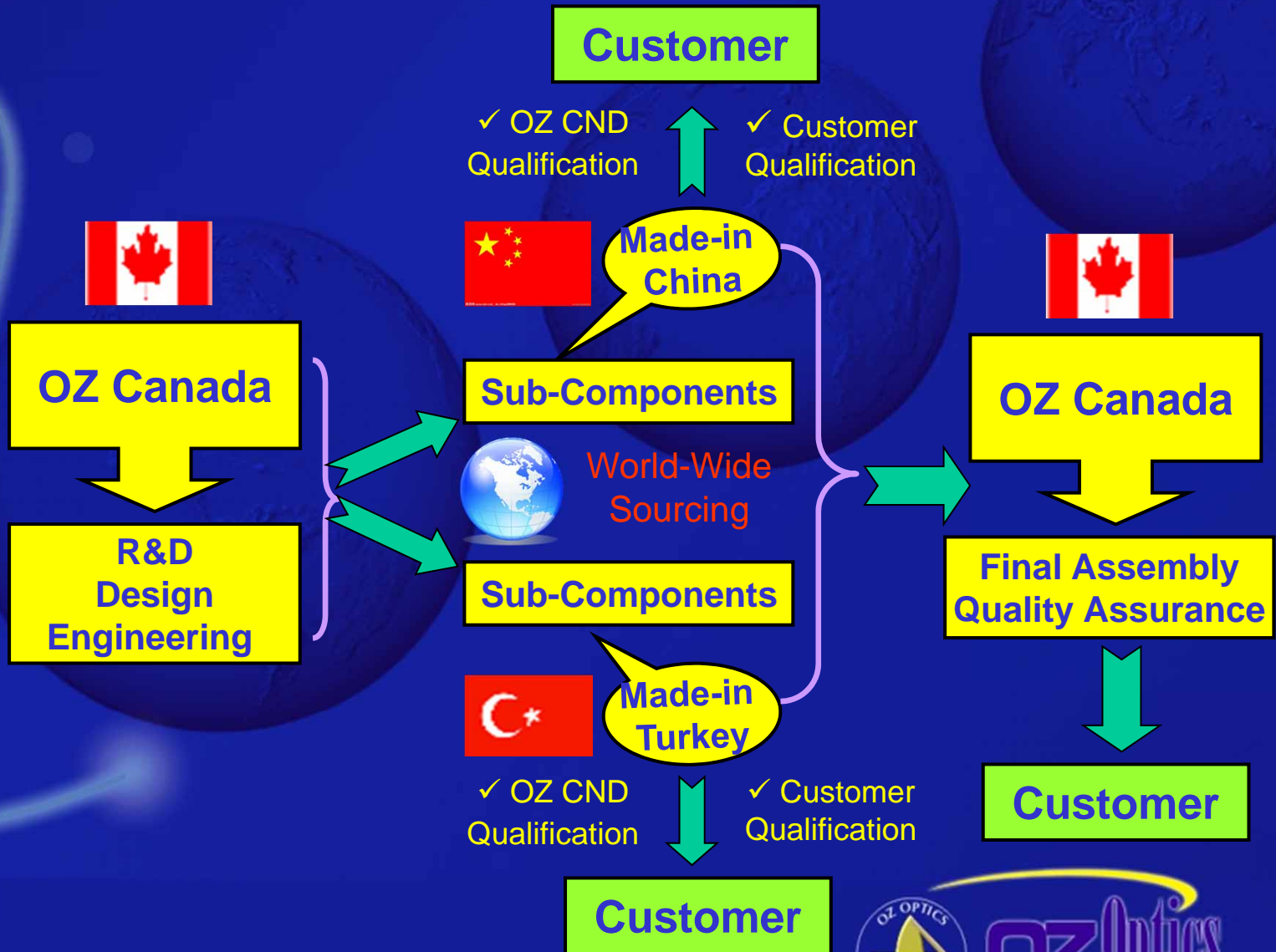


# OZ Turkey Production Lines

## Current Production Lines:

- Polarization Maintaining Components
- Hermetic Seal Assemblies
- Fiber Optic Assemblies
- Lasers to Fiber Delivery System
- Attenuators
- High Power Components
- V-Groove Assemblies

# Manufacturing Strategy



# Industry Standards

All products manufactured are in strict accordance with international industry standards:

➤ *Telcordia Compliance*



➤ *CE Compliance*



➤ *RoHS Compliance*



➤ *ISO 9001:2008 Certified (China, Turkey and Canada)*

➤ *Controlled Goods Directorate Registered*

# Core Competencies

- Pioneer in Polarization Maintaining (PM) Components
- Leader in Wavelength Flattened, High Power & Low PDL Components
- Leader in High Power Fiber Optic Delivery Systems
- Custom Test Equipment, Including Polarization Test Equipment and FTTH Equipment
- Widest Range in Attenuator Product Offering
- Fiber Optic Distributed Strain and Temperature Sensors
- Complete product line for OCT applications & 2 Micron

# Leading Technology

- **High Power Isolators**
  - power handling > 50W
  - low loss, low cost turnkey solution



High Power Free Space and Pigtailed Isolators

- **Pioneer in Polarization Maintaining (PM) Components**
  - wavelength flattened
  - high power & low PDL
  - PM test equipment



Polarization Maintaining Patchcords

Distributed Strain and Temperature Sensors



- **Fiber Optic Sensor**
  - fast and simultaneous measurement of strain & temp
  - large structure health monitoring

High Power Collimators/Focusers



- **Leader in High Power Fiber Optic Delivery Systems**
  - specializes in custom design



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## OUR VISION

- Be the preferred Supplier of choice
- Capture and expand market share
- Maximize shareholder value

## OUR MISSION

- To become the leading provider of innovative optical products to telecom and non-telecom sectors

## OUR CORE VALUES

- Leadership
- Teamwork
- Boldness
- Commitment
- Innovation
- Rewards

## OUR QUALITY POLICY

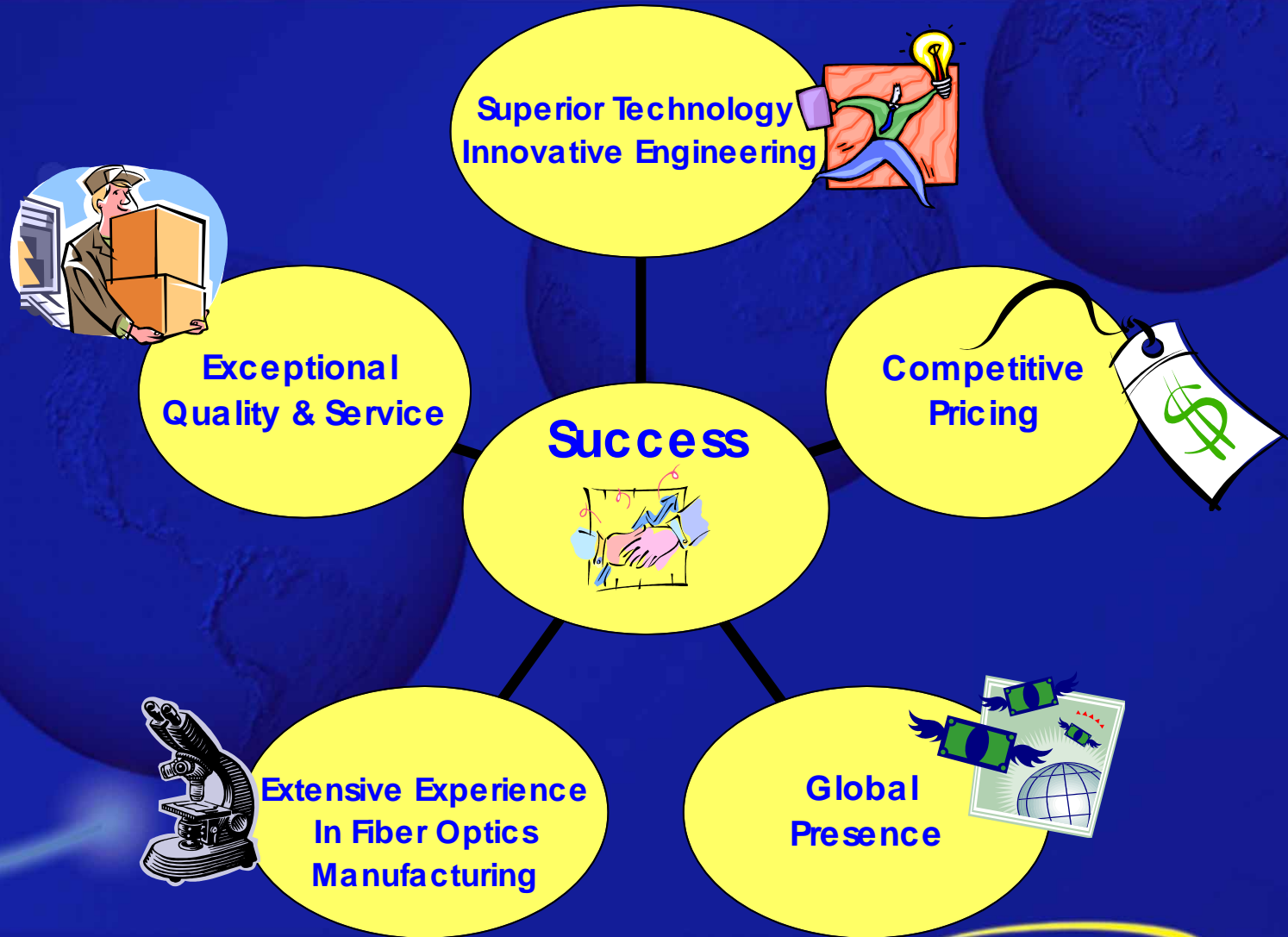
- Provide our Customers with a competitive advantage, leveraging performance, price and delivery, through a continuous process of Quality advancement in all areas of our Company
- Communicate effectively to our Customers, Suppliers and Shareholders our commitment to Quality and continuous improvement
- Promote opportunities of professional development for all members of our Company through education, training and personal challenge

Ömür Sezerman  
President



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# Competitive Advantage



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# OZ Optics

*Your solution provider for existing and next generation fiber optic components and test equipment*

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# OZ Optics Turkey

*Thank you for choosing OZ !*