

A black and white photograph taken from a low angle looking up at several tall skyscrapers. The buildings are framed by a dark, semi-transparent geometric shape that resembles a stylized 'X' or a network diagram. The sky is visible in the background between the buildings.

2020 CSN - IR BOOK

CORNERSTONE NETWORKS

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- 2020 Business Strategy – 3C's
 - Mission
- 5G Strategy (Leading Strategy)
 - Company Introduction
 - CSN's affiliates
 - About Cornerstone Networks
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 - About Fi-Ra Photonics
 - About New Seoa
- Products Information

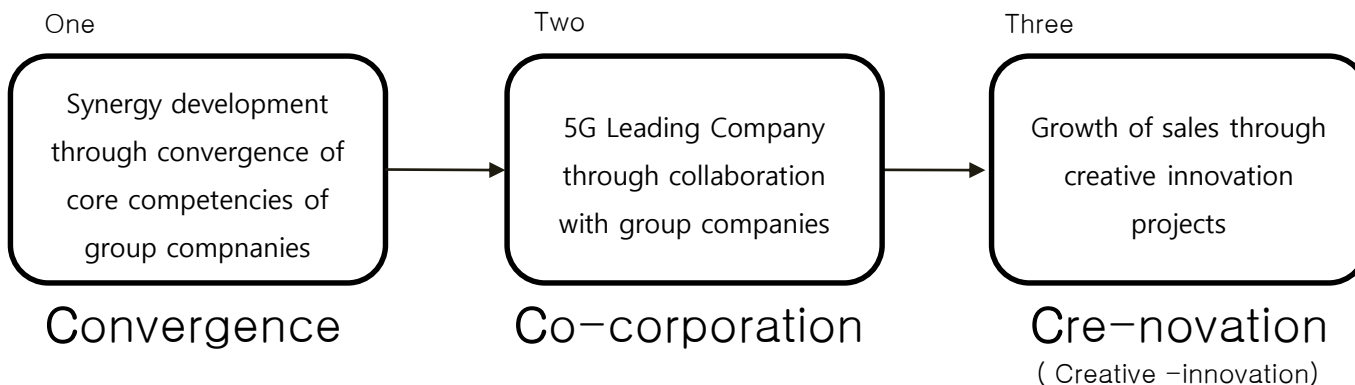
‘Establishment of 3C strategy for 5G global leader company’



What's next.....?

3 C

(Establish 3 strategies)



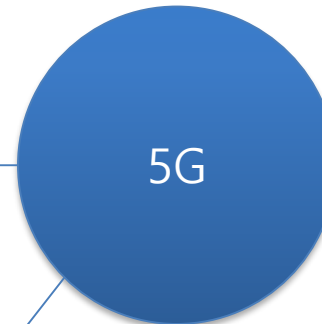
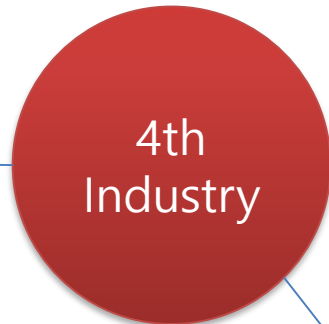
CORNERSTONE NETWORK: MISSION 2020

Growth and diversify company's portfolios through increasing core competencies in new business of subsidiaries and relative companies

1. Education Industry

sentrol

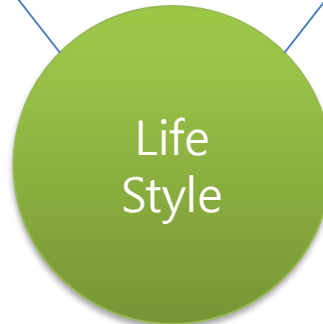
Collaboration with affiliate
– 3D print reinforcement
Sales infrastructure
Searching new market



2. Expand capacity of subsidiaries



Activation with subsidiaries
– Domestic : KT / SKT collaboration
– International : Japan/Vietnam/Latin American Market
Maximize competence through structural improvement



3. Optimizing Profitable Business to Increase Sales

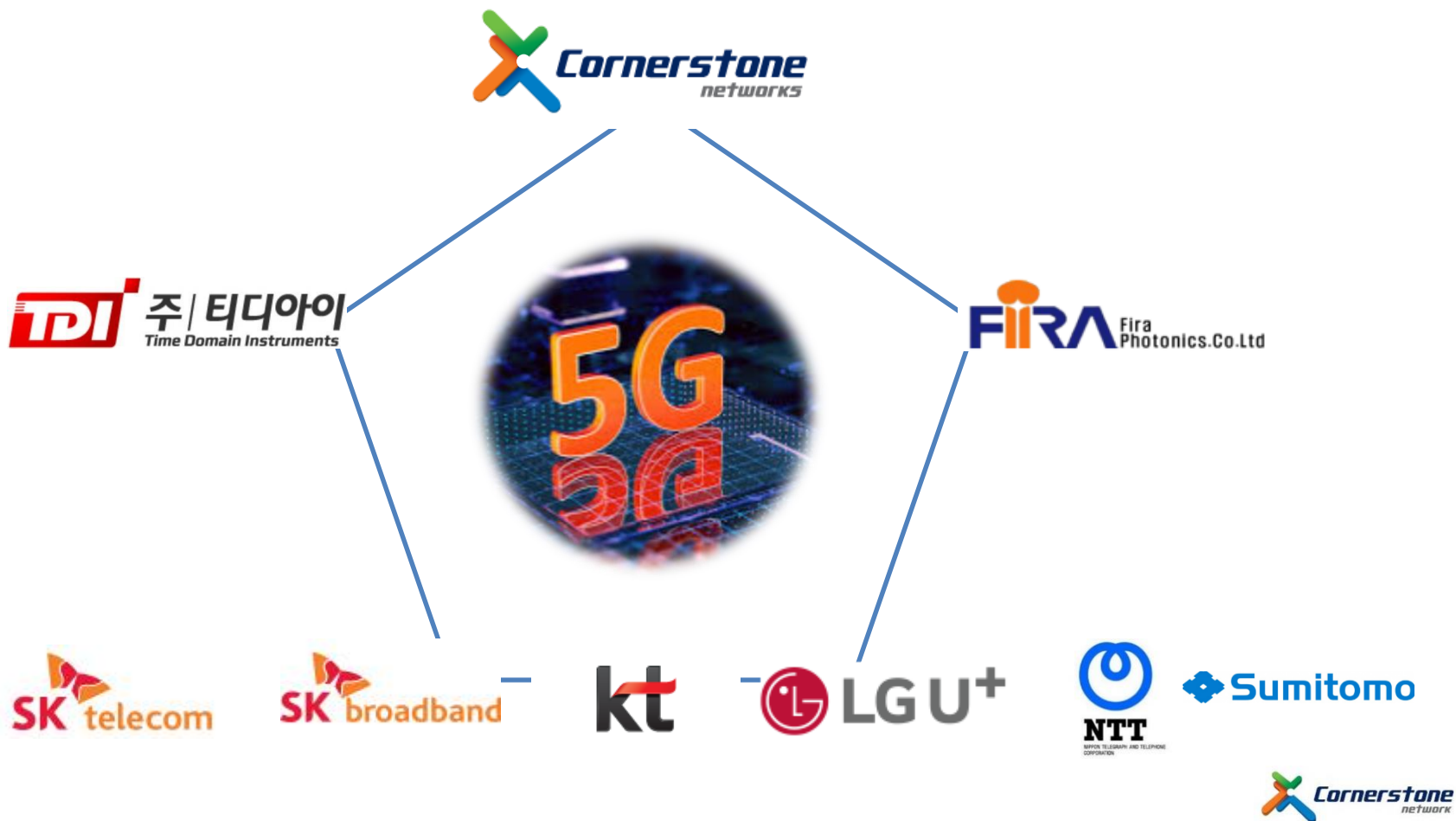


Growth sales for Tax-free shops(New Seoa)
Increase sales through domestic exclusive right – Micro dust products(Nasal Guard)
Profit-focused business to secure cash liquidity



CORNERSTONE NETWORK: '5G LEADING STRATEGY'

Business Strategy for Establishment of Corporate Culture and Global Market by Leading the 5G Era



CORNERSTONE NETWORK: 5G CORE COMPETENCE



Fi-Ra Photonics	5 G	TDI
Core Material Parts	Category	5G Instruments
PLC (W Grade)	Main Product	OTDR
KT / Japan Sumitomo (NTT)	Affiliate	SKT / LG U+
Approx. 8 Millions(USD)	Sales(2019)	Approx. 4.3 Millions(USD)
KT 5G-MUX Related Equipment Supply	Performance	SKT / U+ OTDR Instruments Delivery
W-Grade Wafer Tech. Only in KR	Advantage	SFP Optical Transceiver ORDR Tech. (Standard, General Purpose)

CORNERSTONE NETWORK: TECHNOLOGY CONVERGENCE

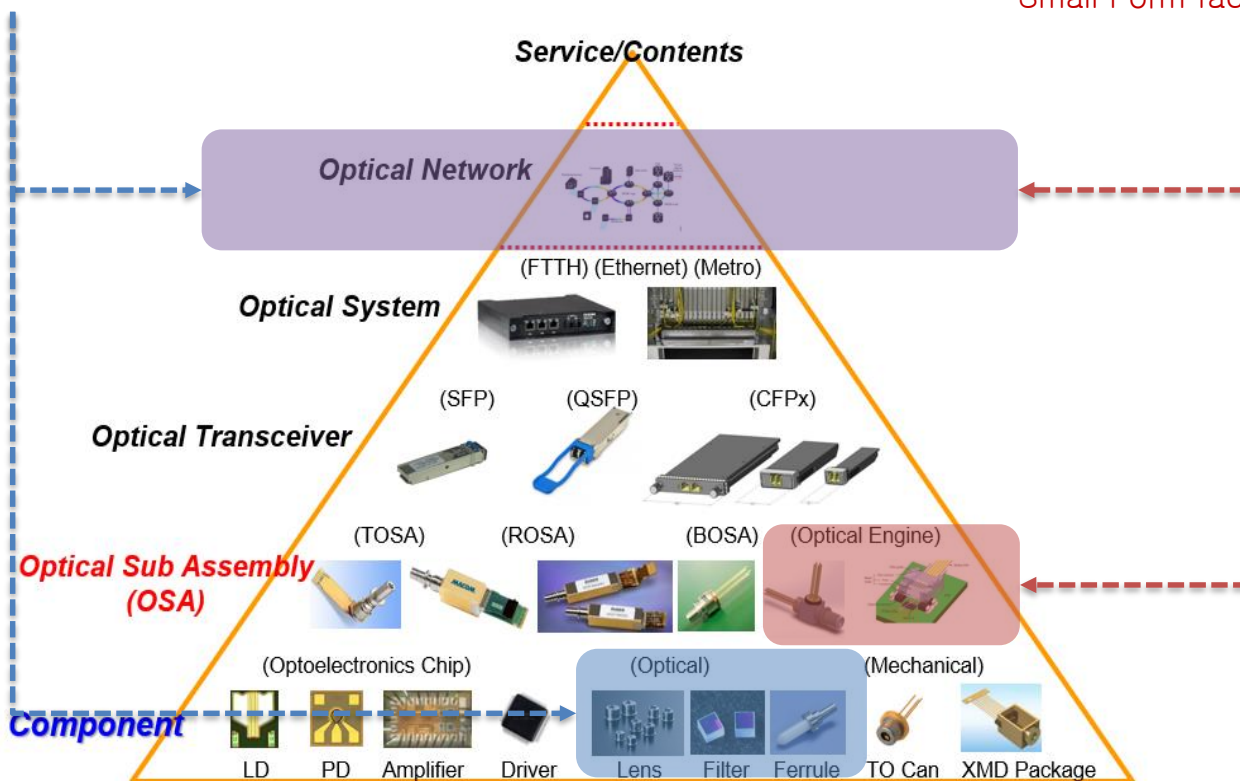
Convergence for Component Chip/Module Technology and Electronic Circuit Chip/Module Technology



Planar Lightwave Circuit
Chip & module



Electric circuit &
Small Form factor packaging



CORNERSTONE NETWORK: SOLUTION FOR WIRED AND WIRELESS

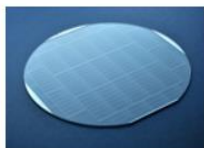
Providing Total Solution for Wired Network Construction and Maintenance



Provides Total Solution for Optical Splitting and Rerouting without Electricity

Supply Base Station and Network Maintenance Solution through Remote Monitoring

PLC Wafer



PLC Chip



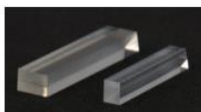
PLC Splitter Module



DWDM Wafer



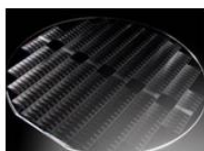
DWDM Chip



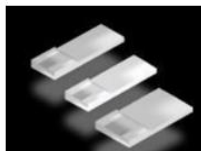
AWG Module



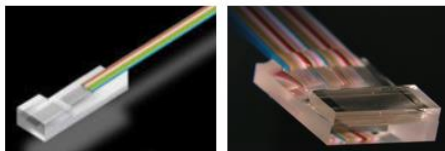
Fiber Array Wafer



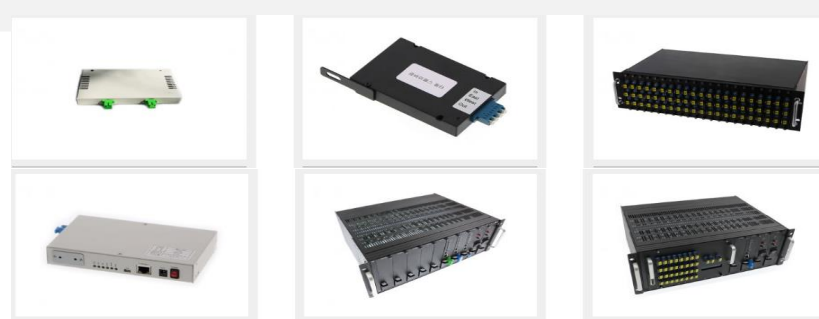
Fiber Array Chip



Fiber Array



Light path Pilot field(Termination/bypass/Pilot Filter, Ethernet OTDR)



Instrument field(Strain/Temp, Fire Monitoring/ Portable Measurement)



CORNERSTONE NETWORK: COST-EFFECTIVENESS

Provides Operators with Ways to Reduce Wired Network Investment Costs



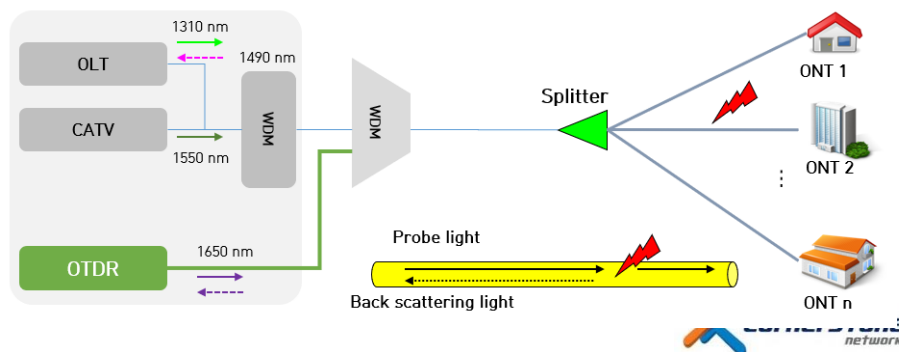
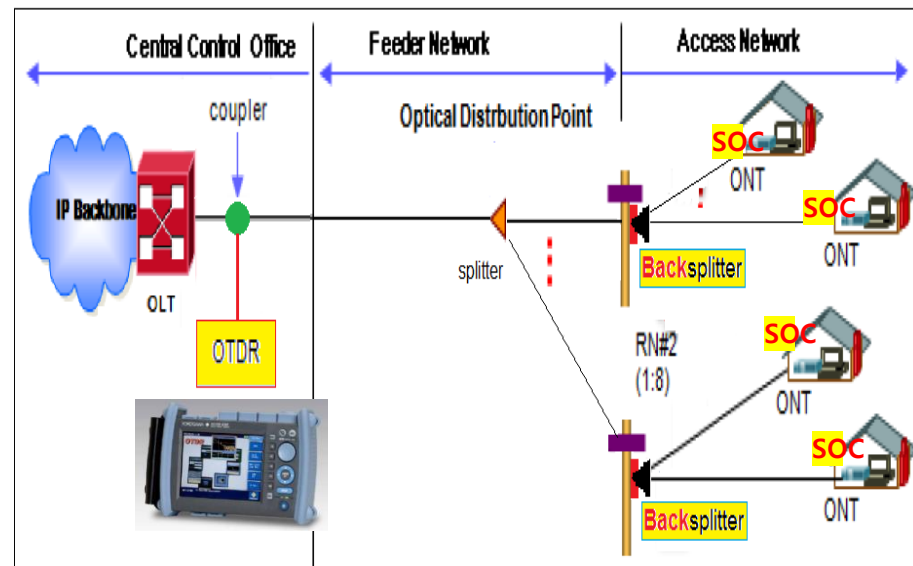
Minimize Network Construction Costs,

Passive optical components to guide communication signals to their destination without electricity



Minimize Network Maintenance Costs,

Network monitoring equipment that can remotely monitor network failure in real time



CORNERSTONE NETWORK: 5G MAJOR PARTNERS



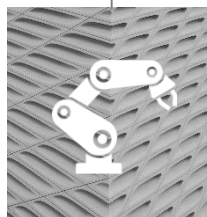
Korea	
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Korea	
Japan	
Overseas	

WE
“COME TOGETHER TO MAKE DREAM
WORK AND BUILD BETTER FUTURE”

• Company Overview (Company Introduction)



PLATFORM

- KOSDAQ listed Company
- Educational Equipment Production and Delivery
- 70% Market Share



HIDDEN CHAMPION

- PLC (flat-type optical circuit) Technology
- Communication Parts Manufacturing company
- WGrade Product Manufacture
- R&D and Supply



CASH COW

- Annual sales 13 Millions (USD)
- Ginseng Products
- Tax-Free Shop

CORNERSTONE NETWORK: CSN AFFILIATES



COMPANY NAME Fi-Pa Photonics Co.Ltd
CEO Soon No LEE

ESTABLISHMENT DATE NOV1999

BRANCH Vietnam China,
Hong Kong [distribution center]

COMPANY DETAILS 5G Photonic [Production
manufactures and developer]

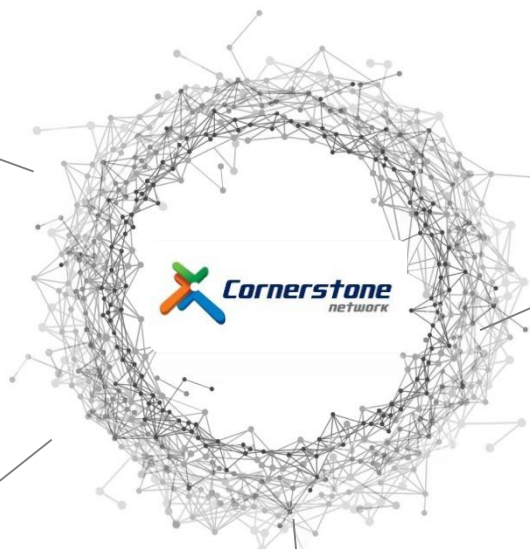


COMPANY NAME TDI Co.Ltd

CEO Hyung Woo KWON

ESTABLISHMENT DATE MAY 2014

COMPANY DETAILS 5G Optical measuring
instruments manufacturer

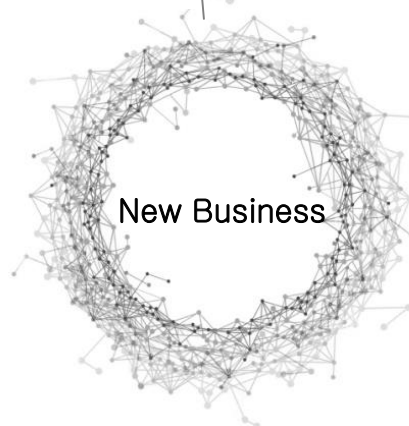


COMPANY NAME New Seoa Co. Ltd
CEO Hyun HONG

ESTABLISHMENT DATE JAN 2015

DISTRIBUTION CENTER Mapo-gu, Seoul

COMPANY DETAILS Selling ginseng products
with tax-free



Micro Dust Filtering Products Distribution Business

COMPANY INFORMATION

Founded in 1986/ Listed on KOSDAQ in 1997

It consists of electronic education equipment, intelligent robot, electronic measuring instrument, and educational 3D printer business field. Its is activated through the development of new equipment for electronic education equipment, efforts to increase exports by winning overseas projects, and advance into new business through educational 3D printer business company.

** Major Subsidiaries

- Fi-Ra Photonics (90% Share) : 5G Core parts Manufacturing
- New Seo : Tax-Free Shop (Annual 13 Million USD Sales)
- TDI (100% Share) : 5G Optical Communication Instruments Manufacturing



CS[CORNERSTONE] NETWORK (*KOSDAQ Korean Securities Dealers Automated Quotation*) is a stock exchange listing company who manufactures and supplies abroad range of technical education and training equipments. The company's manufacturing productions are all accredited equipments which, marked as flagship all over Asia. CSNETWORK had recently expended the business platforms by building partnership and subsidiary agreement with three Korea's leading groups who specializes with 5G photonics, Selling ginseng products with tax-free price. By integrating into various fields in business CSNetwork hoping to provide economy benefits in Asia and all over the world.



Reliable

We have firm partnership with our clients all over Asia. We believe in building and maintaining long term relationship with all our clients.



Solution

We develop new and old supplies to best support and result maximum satisfactions. We are masters in offering and support needs of individual clients.

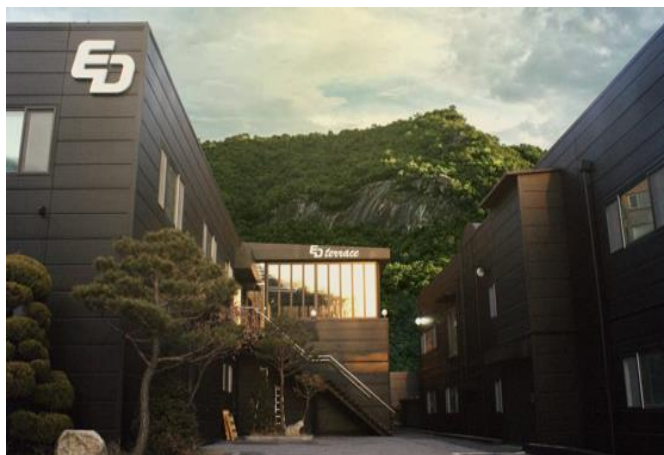


Affordable

We have provide best affordable and competitive equipments to all clients.



‘Leading the Future – Cornerstone Networks’



- **Products:** **Educational laboratory equipment**(7 Product lines, more than 300 products)
Sceldis (SVF-Isolator), Nano Magnetic Bead Robot
- **Certification:** Quality Management System Certificate
ISO001 : 2009 – KTC
INNO BIZ -KOTEC
MAIN BIZ-KODIT0
KFDA, GMP 3 Degree
- **Awards:** 24 Awards
2013. Industrial Medal in Meritorious Division at Korean National Robot Competition
2011. Prime Minister Award in Robot Division at Korean National Robot Competition
2011. Achieve \$1,000,000.00 export record in Korean National Trades Day
2008. Receive President's Award and Innovation Prize

NAME OF COMPANY:	Cornerstone Network	PRESIDENT(s):	HpeLEE	COMPANY CAPITAL:	Approx.27 million US dollars
ESTABLISHMENT DATE:	21 st April 1986	DATE OF KOSDAQ LISTING:	11 th August 1997	HQ ADDRESS:	7F, L&B Tower, 414, Teheran-ro, Gangnam-gu, Seoul, Republic of Korea
EMPLOYEE NO.:	47 (2019.11)	WEB:	www.cornerstn.co.kr	FACTORY ADDRESS:	13, Sanjigok-gil 22beon-gil, Gwangju-si, Gyeonggi-do, Republic of Korea

About 150 Partners and Customers

대학교	4년제 대학교	 서울대학교	 KAIST	 POSTECH POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY	 전북대학교 CHONBUK NATIONAL UNIVERSITY	 KNU 강원대학교 KANGWON NATIONAL UNIVERSITY
	기술/전문 대학	 KOREATECH 한국기술교육대학교	 한밭대학교 HANBAT NATIONAL UNIVERSITY	 충북대학교 CHUNGBUK NATIONAL UNIVERSITY	 CNU 충남대학교 CHONNAM NATIONAL UNIVERSITY	 KNU 경북대학교
고등학교	기술/전문 대학	 한국폴리텍대학	 유한대학교 YUHAN UNIVERSITY	 인하공업전문대학	 울산과학기술대학교	 동양미래대학교
	전문기술고등학교 / 특성화고	 서울로봇고등학교 SEOUL ROBOTICS HIGH SCHOOL	 서울과학기술고등학교 Seoul Science Technical High School	 학교법인 한국전철학원 수도전기공업고등학교 HANKOOK STEEL HIGH SCHOOL	 수원하이텍고등학교 Suwon Hi-Tech High School	 평택기계공업고등학교 Pyongyang Mechanical and Technical High School
	기술고등학교	 인천전자마이스터고등학교 INCHEON ELECTRONIC MEISTER HIGH SCHOOL	 동아마이스터고등학교 Dongah Meister High School	 학교법인 한국전철학원 압록제철고등학교 HANKOOK STEEL HIGH SCHOOL	 포항제철공업고등학교 Pohang Steel Technical High School	 전자특성화 광운전자공업고등학교 Kwangju Electronics Technical High School
훈련원	기술고등학교	 부산기계공업고등학교 Busan National Mechanical Technical High School	 기계특화 마이스터고 국립 전북기계공업고등학교 Cheongju Mechanical Technical High School	 광운전자공업고등학교 구미전자공업고등학교 Gwangju Electronics Technical High School	 천안공업고등학교 Cheonan Technical High School	 의정부공업고등학교 Uijeongbu Technical High School
	기술고등학교	 아산전자기계고등학교 Asan Electronics Technical High School	 경기기계공업고등학교 Gyeonggi Mac-Tec High School	 천안공업고등학교 Cheonan Technical High School	 의정부공업고등학교 Uijeongbu Technical High School	 담양공업고등학교 DAMYANG TECHNICAL HIGH SCHOOL
기업체	기술고등학교	 서울특별시 북부기술교육원	 대한상공회의소 인력개발원	 KORAIL 인재개발원	 KEPS KOREA ENGINEERING & POWER RESEARCH CO., LTD.	 NEXT-NGI 경기도농업기술원
	기술고등학교	 SAMSUNG 삼성전자	 SAMSUNG 삼성전기	 POSCO	 HYUNDAI MOTOR GROUP	 한진KPS주식회사
기업체	기술고등학교	 삼성SDI SAMSUNG	 SAMSUNG 삼성중공업	 SSANGYONG MOTOR	 KIA	 한국수력원자력



TDI 주 | 티디아이
Time Domain Instruments

- **Products:** **Optical Communication Instruments(OTDR module)**
Sceldis (SVF-Isolator), Nano Magnetic Bead Robot
- **Own Technology and Patent rights:**
 - Optical line monitoring system and measuring equipment to search for fault location on the optical line to support maintenance in the shortest time
 - Integration of various measuring instruments for exaggeration
 - Operation management based on cloud server
 - Miniaturized and Trendy optical instrumentation for improved mobility

May 2014

Incorporation
(Unit 103, Business Incubation Center, Kyungpook National University)

May 2015

Venture Company Certification

September 2015

Established R&D Center
(Unit 502, IT Convergence Industry Building)

November 2017

Relocated Office
(Unit 705, IT Convergence Industry Building)

May 2018

Factory Registration
(Unit 705, IT Convergence Industry Building)

November 2018

Designated Military Contract Enterprise

NAME OF COMPANY:	TDI Co.Ltd	PRESIDENT(s):	Hyung Woo KWON	COMPANY CAPITAL:	Approx 2 million US dollars
ESTABLISHMENT DATE:	MAY.2014	DESIGNATED DATE OF MILITARY SERVICE SPECIALTY	AUG. 2018	HQ ADDRESS:	705, 47, Gyeongdae-ro17-gil, Buk-gu, Daegu, Republic of Korea
EMPLOYEE NO:	11(2019.12)	CATEGORY OF BUSINESS	Wired Communication equipment manufacturing Business	CONSTRUCTION OF FACTORY	MAY. 2018

• Business Domain

Optical Fiber Pilot System

- Main and general networks are composed of optical paths
- Communication paralysis leads to enormous loss of opportunity cost
- Predicting optical network failures due to variety of accidents are important issues for network management
- Demand market: Public institutions, local governments etc



OTDR Module

- OTDR Module for 5G optical network failure monitoring
- Supply for domestic tele-communication companies
- Customization design according to characteristic



Portable Photometer

- Most of domestic company's optical cable maintenance equipment is imported
- Portable equipment for the maintenance of domestic optical line disturbance including OTDR
- Expanding demand due to rapid growth of Asian emerging industrial markets



Distributed Fiber Optic Sensor System

- Temperature and strain measurement using optical fiber
- Optical Monitoring technology for applications with wide range of monitored areas where point of occurrence is impossible to predict



‘5G Optical Transmission Equipment(Measurement, Sensing, and Diagnostic) – Intellectual Property Rights’

Item	Title	Date Filed	Date Registered	Notes
Patent	Optical Ethernet Communication Network Real-time Optical Fiber Surveillance System	2014.09.26	2016.07.11	
Patent	Optical Ethernet Communication Network Real-time Optical Fiber Surveillance System	2014.10.31	2016.07.11	
Patent	Optical Network Cable Information Management System	2015.01.20	2016.07.05	
Patent	Optical Box with Port for Optical Fiber Maintenance	2015.04.09	2017.01.05	
Patent	Optical Network Track Information Reading Device and Associated Track Information Management System	2015.04.20	2017.03.06	
Patent	Cable Information Transceiver and Reading System	2015.07.03	2015.10.21	
Patent	Cable Information Transceiver and Reading System	2015.07.03	2017.04.24	
Design	Optical Fiber Tester	2018.02.28	2018.11.08	




FIRA Fi-ra Photonics

• PLC (Planar Lightwave Circuit) Technology

- 17years of PLC technology
- R&D researcher for each processes

• Production Capacity and Market Share

- Factories are located in Korea, China, and Vietnam
- About 28% of market share(globally), About 50% of market share(in Korea)
- Same technology in Japan and Israel, of which Korea has more than 50% market share
- About 5 companies in Korea have PLC technology, and only 3 of them have mass production processes.
- The company's market share is estimated at more that 50%

• Quality management

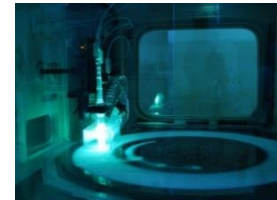
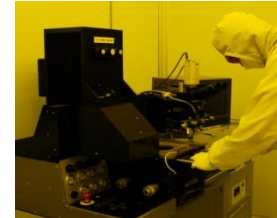
- Quality management by securing technology and process for core products and parts
- : Fiber Array, PLC Wafer & Chip, Assembling(Fiber array & Chip)



NAME OF COMPANY:	Fira Photonics	PRESIDENT(S):	Sen NoLEE	COMPANY CAPITAL:	Approx.2.5millionUSDollars
ESTABLISHMENT DATE:	Nov.1999	HQ ADDRESS:	11-5, Cheomdanventureso-ro38beon-gil, Buk-gu, Gwangju, Republic of Korea		
EMPLOYEE NO.:	100 (2018.11)	WEB:	www.fi-ra.com	OVERSEA LOCATION	Vietnam/China/Hong Kong

• HQ and Factory in KOREA

- QC, R&D Center
- Management team
- Production Line
 1. Semiconductor (PLC, AWG Wafer)
 2. Assembling (Align & Bonding)
- Logistics



Korea

R&D & Own Technical Skill (Semiconductor)

Manufacturing & Logistic.





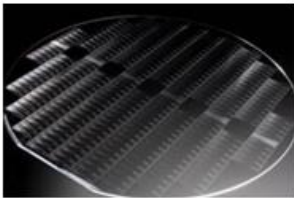

Vietnam

• Vietnam Factory

- Production Line
 1. PLC Chip Dicing & Polishing
 2. Fiber Array Assembling
 3. Splitter Assembling
 4. Connector Assembling.
- QC & Logistics.
- Management team



- Major Products

PLC Wafer	PLC Chip	PLC Splitter Module
		
DWDM Wafer	DWDM Chip	AWG Module
		
Fiber Array Wafer	Fiber Array Chip	Fiber Array
		



‘ Tax-Free shop in Seoul – New Seoa ‘



- **Products:** **3 Different Ginseng Products**
(capsule/powder/liquid extract)
- **Sale Location:** **Operating 5 Floors Sales Booth(B1-F4)**
61 Employees
30 Buses daily Visiting(40 seats)
2500~3000 Daily Visitors
\$100,000 Daily Sales

NAME OF COMPANY:	NewSeoa	PRESIDENT(S):	Hun HONG	COMPANY CAPITAL:	\$250,000
ESTABLISHMENT DATE:	Jan.2015	HQ ADDRESS:	25-1, Yeonhui-ro, Mapo-gu, Seoul, Republic of Korea		
EMPLOYEE NO.:	61 (2019.11)	ANNUAL SALES	<u>15 Million</u>	CUSTOMERS	China/Taipei/Hong Kong

- Annually 13 Millions USD sales of tax-free shops in Seoul – New Seoa Co.Ltd (Increase profitability)
- Business development strengths – Cooperation with Travel Agency ‘Changs’ / 50 Partners companies and attracting Southeast Asian Traveler

1. Business Construction



2. Main Market

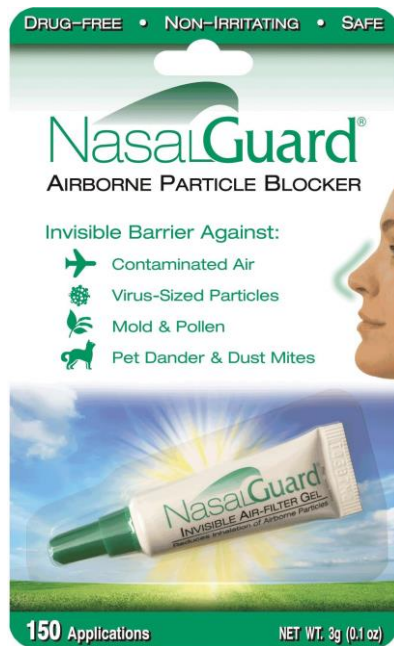


CORNERSTONE NETWORK: NEW BUSINESS

1. Micro Dust related Business



Maximization of profit through Micro dust related business: Exclusive sales rights of Nasal Guard Airborne Particle Blocker by Trutek, USA



Nasal Guard Korean Version

WE
“COME TOGETHER TO MAKE DREAM
WORK AND BUILD BETTER FUTURE”

- PRODUCTS
(5G Products information)

- Products –Line up



1. Product – Manufacture

- OTDR Module
- OTDR Multimeter (TOM 280)
- OTDR Multimeter (TOM 300)
- SFP-OTDR (TPS-200)
- PlugVIEW (TPV-100)



** Reference with product introduction

2. Product – Distribution



1. Fiber Optical cable
2. CPEV,TJV
3. Coaxial cable
4. Arc Fusion Splicer
5. Multi-Pack F
6. Cleavers
7. Stand-Alone Devices
8. Accessories
9. Connectivity
10. FSOC
11. Cable Assemblies
12. MPO Cable Assemblies
13. Optical Splitters
14. Fiber optic closure and Accessories
15. Data Center Solution
16. FTTH Total Solution

17. Educational equipment

- Basic Electric & Mobile Communication training equipment
- Microwave & Antenna communication training system
- Microprocessor & Renewable Energy training equipment
- Home network training equipment
- Bluetooth telecom & Zigbee communication & Sensor Control equipment
- PLC (Programmable Logic Control) trainer / IOT(Internet of thing) trainer

- Products – Line up



Optical Fiber Closure (OFC)

Optical Termination Box(OTB)

Optical Fiber Distribution(OFD)

Network Access Point (NAP)

Access Terminal Box (ATB)

Optical Network Terminal(ONT)

Field Installable Connector(FIC)

SPLICER

Optical Fiber Attenuator(OFAT)

Optical Patch Cord (OPC)

Optical Fiber Adapter(OFA)

PIGTAIL

PLC Optical Splitter(SPLITTER)

RACK

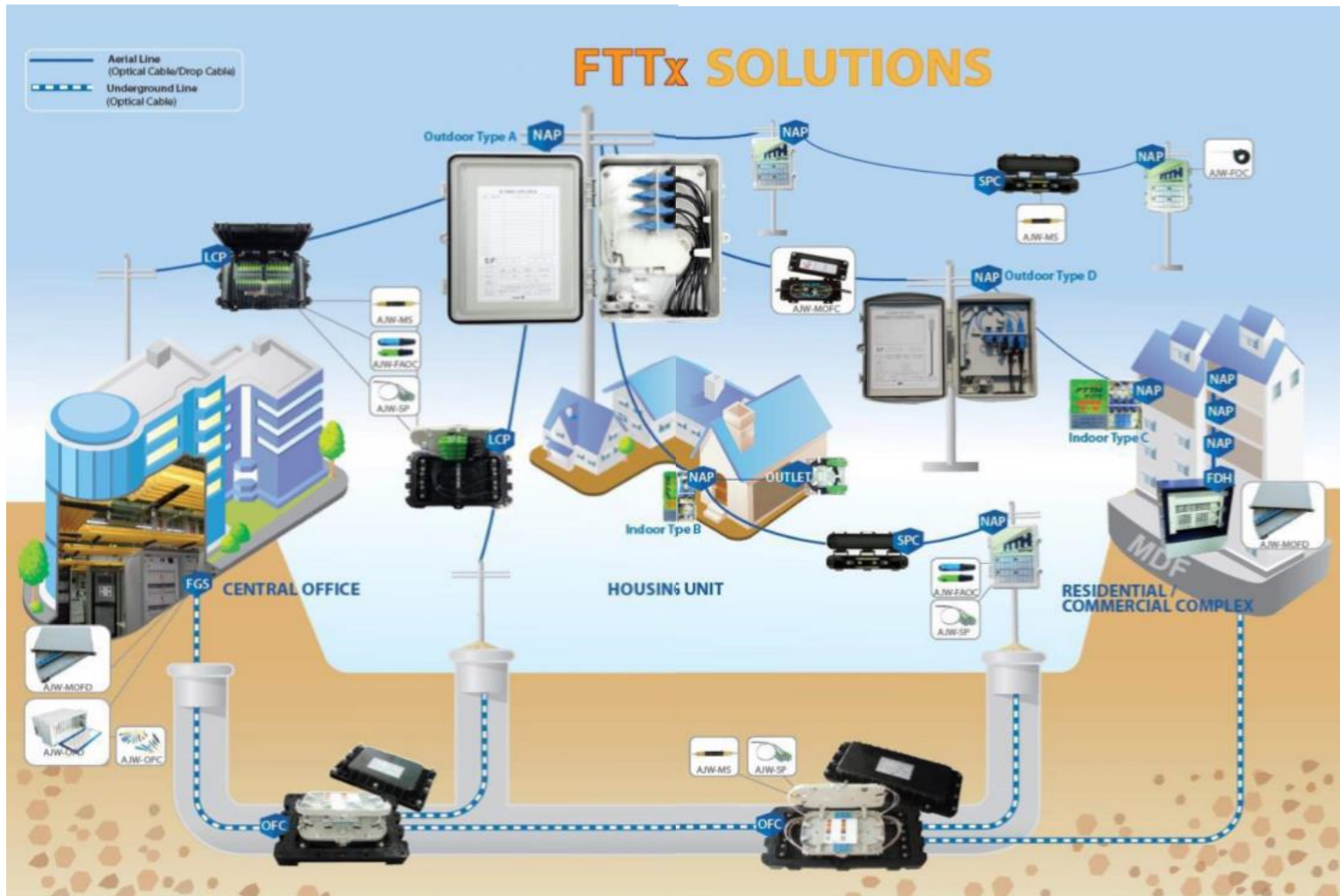
FTTH Tool Set

OPTICAL XABLE

FTTH CABLE

** Reference with product introduction

- FTTx SOLUTIONS –



WE
“COME TOGETHER TO MAKE DREAM
WORK AND BUILD BETTER FUTURE”

Thank You