

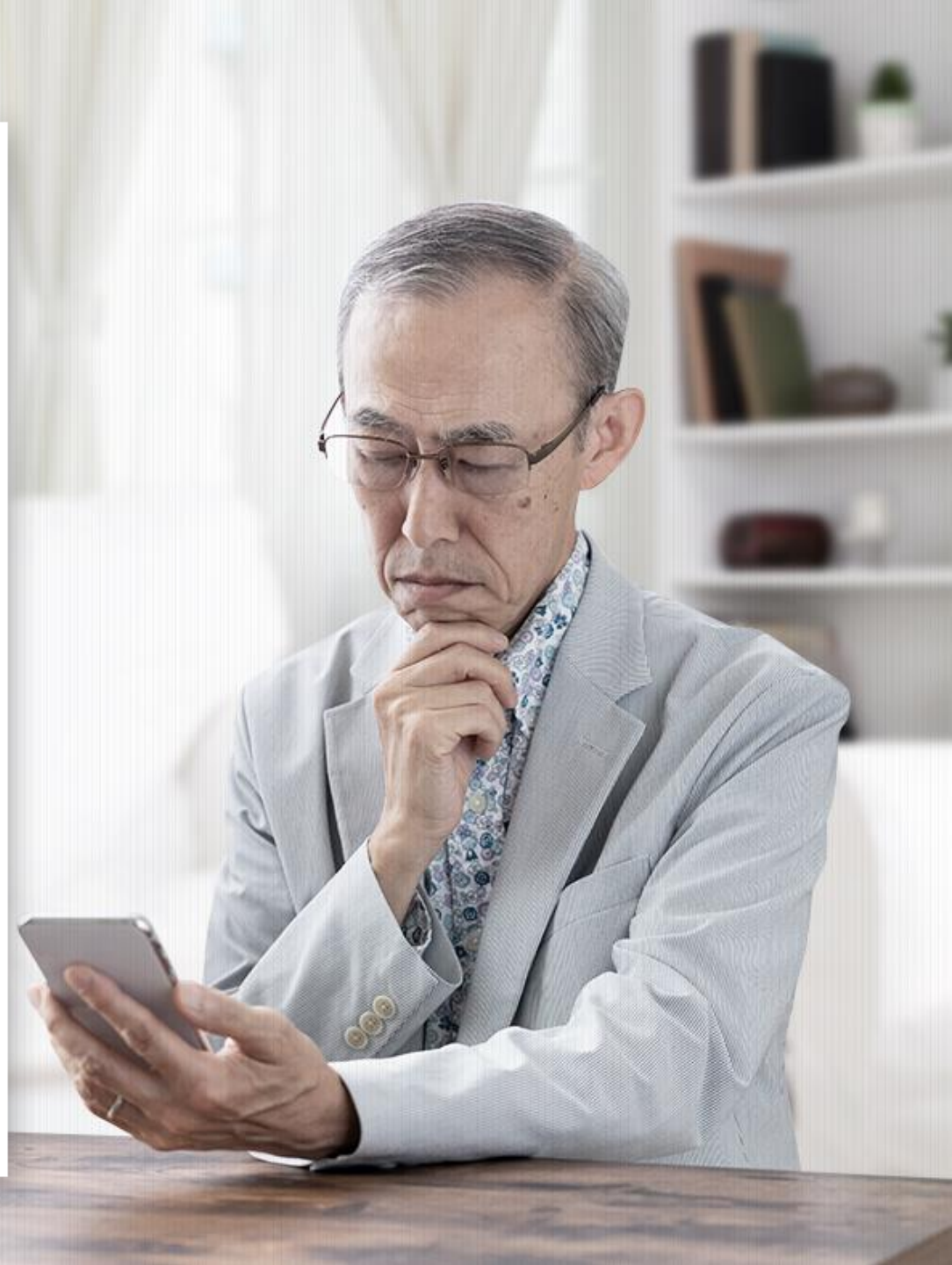
Display Calibration Solution for Presbyopia

THE VISION CORRECTION SOLUTION FOR PRESBYOPIA



Accelerated by **SAMSUNG**

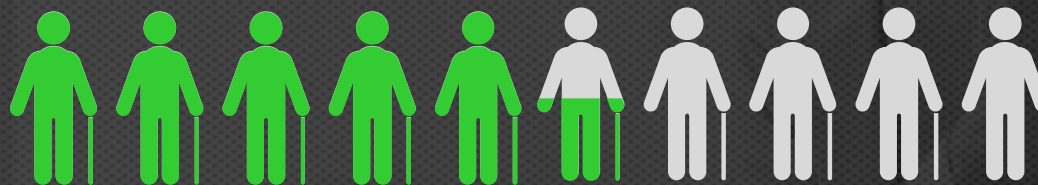
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Presbyopia

World
Population **55%** Over





Presbyopia



Koreans

40%

of More than





Presbyopia

Annual
Increase Rate of **16%**



노안의 가장 큰 불편한 점

나미 들어
보이고
읽지 않타

생애
첫 인력대
다 초형
인력?

스마트폰을
편하게
보고 싶타

스마트폰을
보기 어렵타



Inconveniences caused by Presbyopia

Psychological age of people
in their 50s is 39.6 on average

I don't
want to be
seen as old

It's hard to read
text on phones!

Were your
first glasses
multifocal?

Side effects of multifocal glasses
: Headaches, nausea

I want clearer
letters on
the smartphone!



Discover new display technologies to correct presbyopia



Presbyopia Corrective Film and Display Calibration App

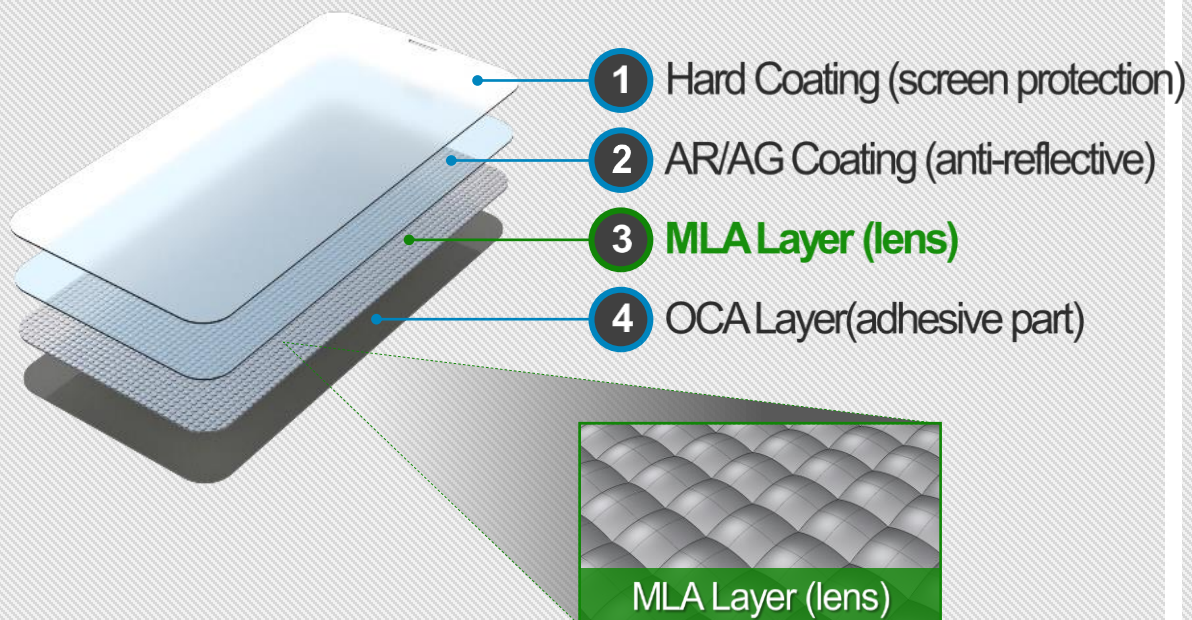
Presbyopia Corrective Film



- Lens array that creates a virtual image
- Phone screen protection

Structure of Presbyopia Corrective Film

PATENT



Presbyopia Correction and Eyecare Service App



- Download from App store, Screen image processing
- User data collection, Expert-linked service

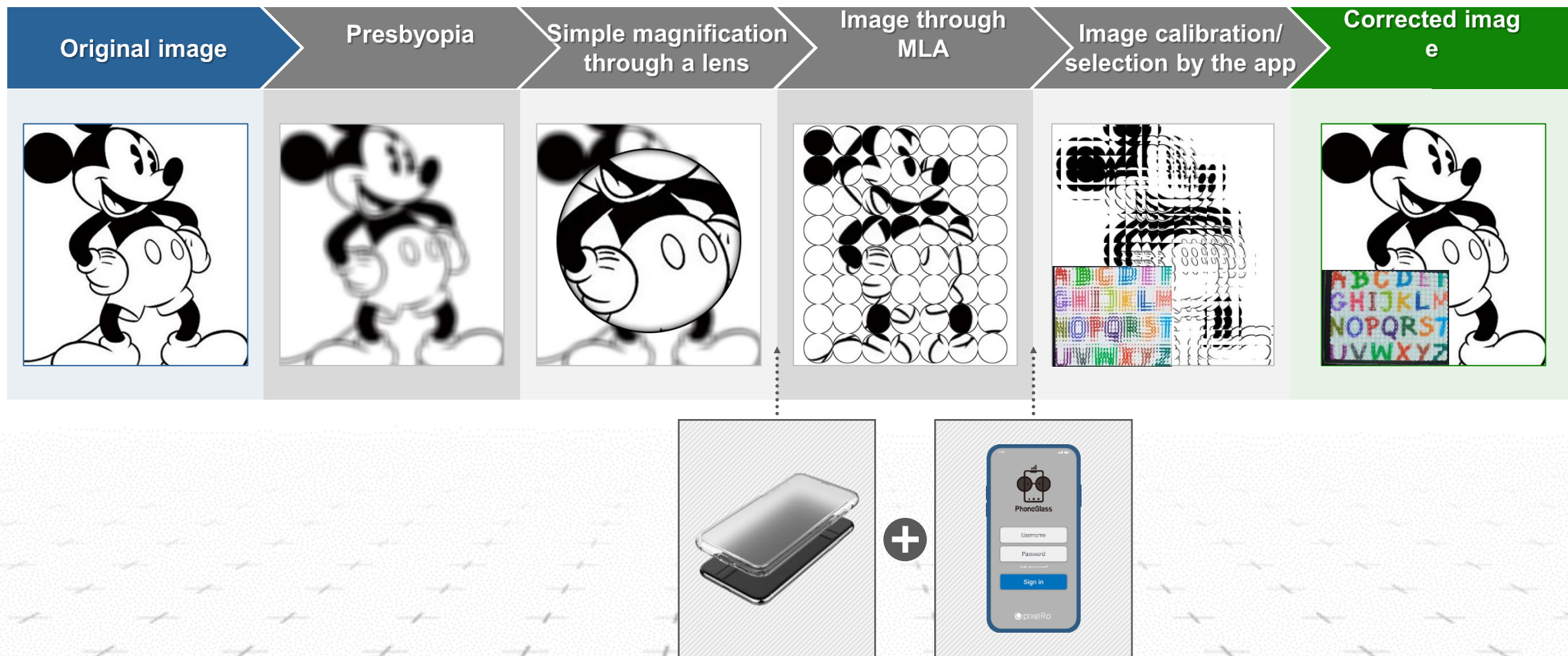
Presbyopia Correction and App

PATENT



- 1 **Screen Image Processing**
- 2 User data collection and analysis
- 3 **AI-based service (linked with experts on vision and presbyopia)**

Combination of the lens corrective film moving the screen and the image processing app



Clearer image for early stage presbyopia, replacing the tempered glass screen protector

Presbyopia

Corrected Image

Image processing &
MLA (1445x1020)



► 4 types of corrective lens 1 diopter ~ 4 diopter

- 1st launching: ~ 1 diopter for early presbyopia
- 2nd launching: 2 diopter ~
- Further expansion to display devices

► High transmission rate and touch sensitivity (with ETRI)

- Replacing existing glass screen protector
- Same levels of transmission rate and touch sensitivity with 0.4 mm or less in thickness
- Using ETRI's tech, super hydrophobic and high transmission (more than 95% of transmissivity -glass)

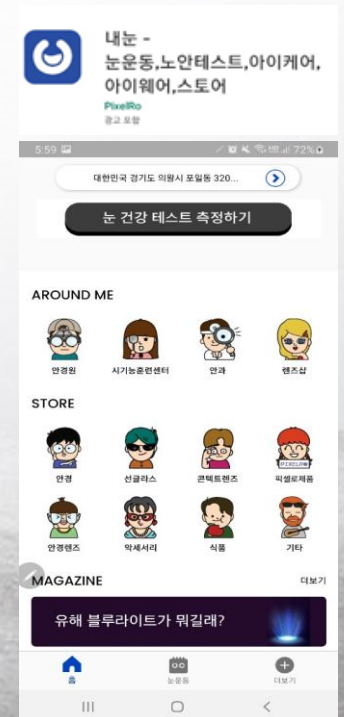
► Protect and correct your vision

- Showing original colors instead of the blue light through other apps

Screen calibration and expert advice based on eye examination

Connected to experts on presbyopia and vision correction based on location information through the app: online optical shops

- The app Nenoon can connect you to local eye doctors and opticians based on your data (video algorithm data) about vision and presbyopia conditions.
→ The experts' feedbacks are used to improve the algorithm.
- Video algorithm of color overlay/font to improve presbyopia and readability
- Mobile eye exercise programs provided by vision institute (optional)



App Nenoon Description



Nenoon - eye exercise, presbyopia test, eyecare, eyewear, optical store

Interactive presbyopia test/eye health management and exercise
Location-based service connected to local experts

1. Individual presbyopia test

Eyecare through presbyopia test for each user

2. Eye exercise recommendations

Daily eye exercise for 10 mins

3. Expert assistance nearby location

The app Nenoon manages individual eye data such as the glasses purchased last year and the previous prescription.

4. Service linked with optician and eye doctor

As in a way of social networking, you are connected to optician or eye doctor near your location through the app, to customize your glasses.

5. Eye care products, tuning,

The app brings you most trendy eye care products and eyewear.

6. Individual presbyopia test

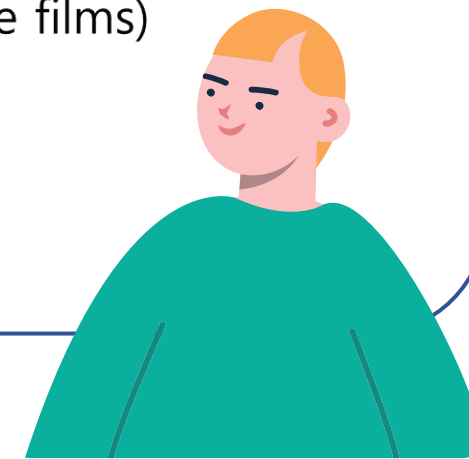
Eyecare through custom presbyopia measurement

App Nenoon Description

Nenoon - eye exercise, presbyopia test, eyecare, eyewear, optical store

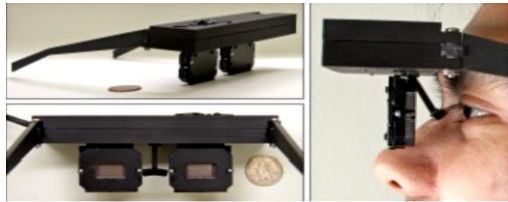
Interactive Eyecare Service

- Recommends eyeglass stores and eyecare clinics according to results of the mobile presbyopia test
- Suggests eye exercise and advanced eyecare practices through the interactive mobile app
- Conducts a zero-contact visual acuity test and arranges professional services including customizing glasses or purchasing ready-made eyewear (colored contact lenses, eyeglasses frames, eyecare products including vision protective films)
- Networks with social communities for eye health

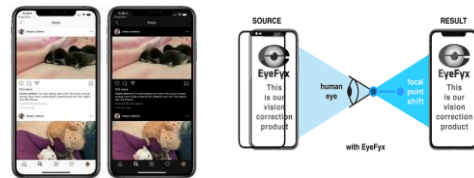
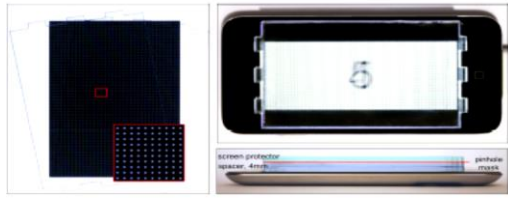


Technological Advantage

Competitor



MIT



Limitation

This head-mount device can correct the vision,
but is limited to a short distance (2 cm)

1

This pinhole lens can be installed in smartphones,
but causes resolution loss due to low transmission rate (less than 50%)

2

Nvidia, Apple, and Nanoveu are trying various vision correction measures,
but with issues regarding resolution rate and distance.

3

Technological Advantage

The use of micro lens allows the development of presbyopia corrective solution with high transmission rate (90% and more) and for a long distance (250mm).

Globalization



► Focusing on Android phone models - Galaxy ◀

- Galaxy smartphone markets: 5.5 M units a year
- Market share in North America (24%) and in Western Europe (34%)



► Focusing on non-Galaxy models ◀

- Smartphone market (excluding Galaxy models)
- : 13M units a year
- Market shares of Huawei, Oppo, and Xiaomi
- : approx. 45%



North America

- Employing Samsung's supply channel
 - Samsung's B2B marketing
 - Jointly participating in major exhibitions (online CES)
- Large offline distributors
 - Wallgreen, etc.

Western Europe







- Employing Samsung's supply channel
 - Samsung's B2B marketing
 - Jointly participating in major exhibitions (MWC, IFA)
- Major eyewear distributors model
 - GrandVision (German consulting supported by KIC)

China/ Japan

- Expanding for functional film markets
 - China Int'l Import Expo in Nov. (ICEIC)
 - Global crowd funding: Indiegogo
 - Japan's crowd funding: Makuake
- Channels by mobile network operators:
 - China Telecom (startups supported by ICEIC)

Distribution channels

► Optical stores and eyecare clinic/smartphones/network operators

 <p>Prescription Distribution</p>		<ul style="list-style-type: none"> • Distribution and sales by dedicated eyewear sellers <ul style="list-style-type: none"> - New business idea for offline stores - Expanding location-based O2O business service via app - Collecting customers' vision data from optical shops • New services of eyecare clinic (overseas patients): <ul style="list-style-type: none"> - Remote treatment of vision/presbyopia tests
 <p>Platforms for network operators</p>		<ul style="list-style-type: none"> • Distribution and sales to network operators + App download <ul style="list-style-type: none"> - Dedicated network operators and affiliates • Service for social media + App download <ul style="list-style-type: none"> - Presbyopia corrective fonts and calibration film for social networking sites
 <p>Smartphones for special purposes</p>		<ul style="list-style-type: none"> • Provided as accessories for the public safety smartphones <ul style="list-style-type: none"> - Market share by Samsung: 3M units (11% of market share of public safety smartphones by 2023) • Applied as a default system <ul style="list-style-type: none"> - Presbyopia solution applied to Samsung phones (customized background color)

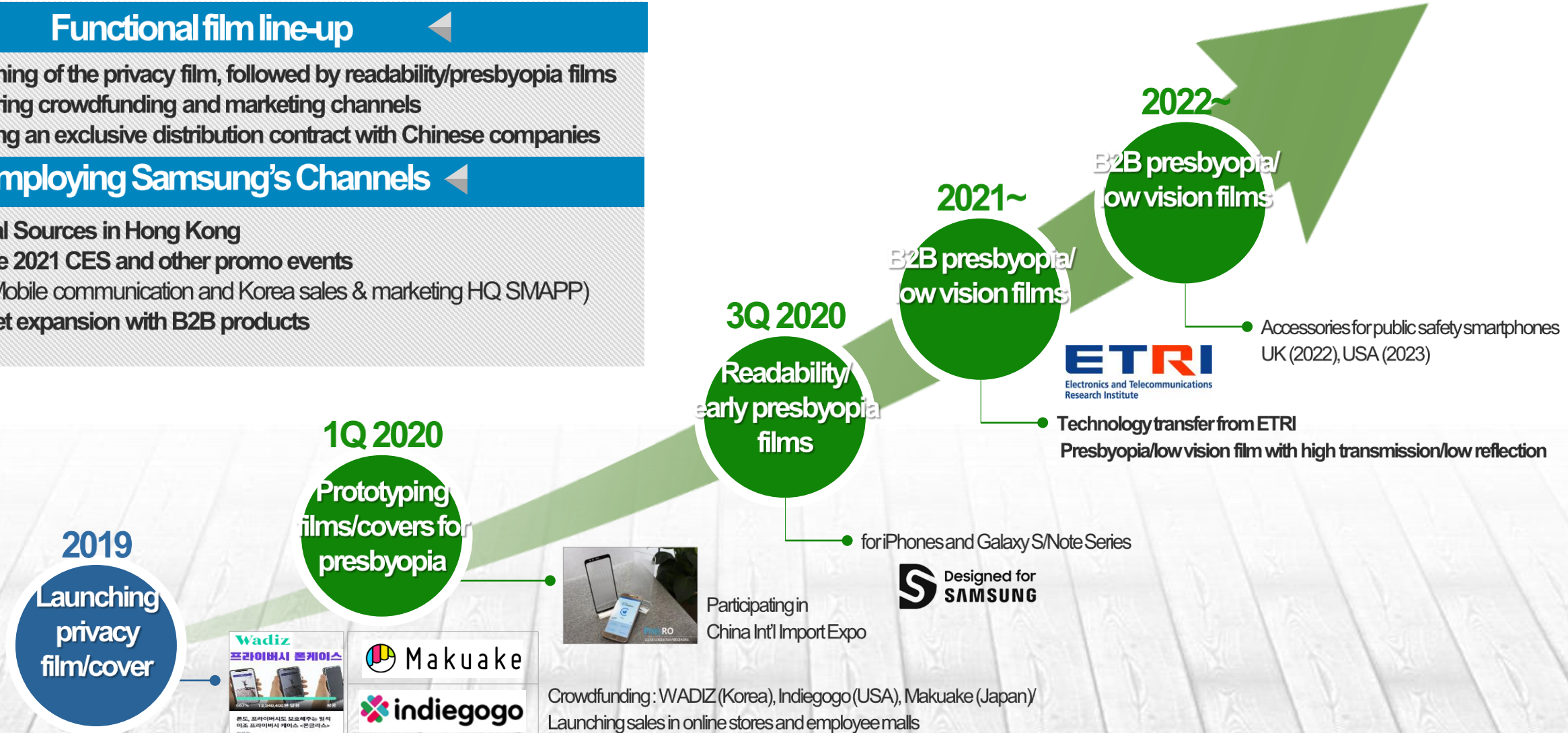
Marketing Strategies

Functional film line-up

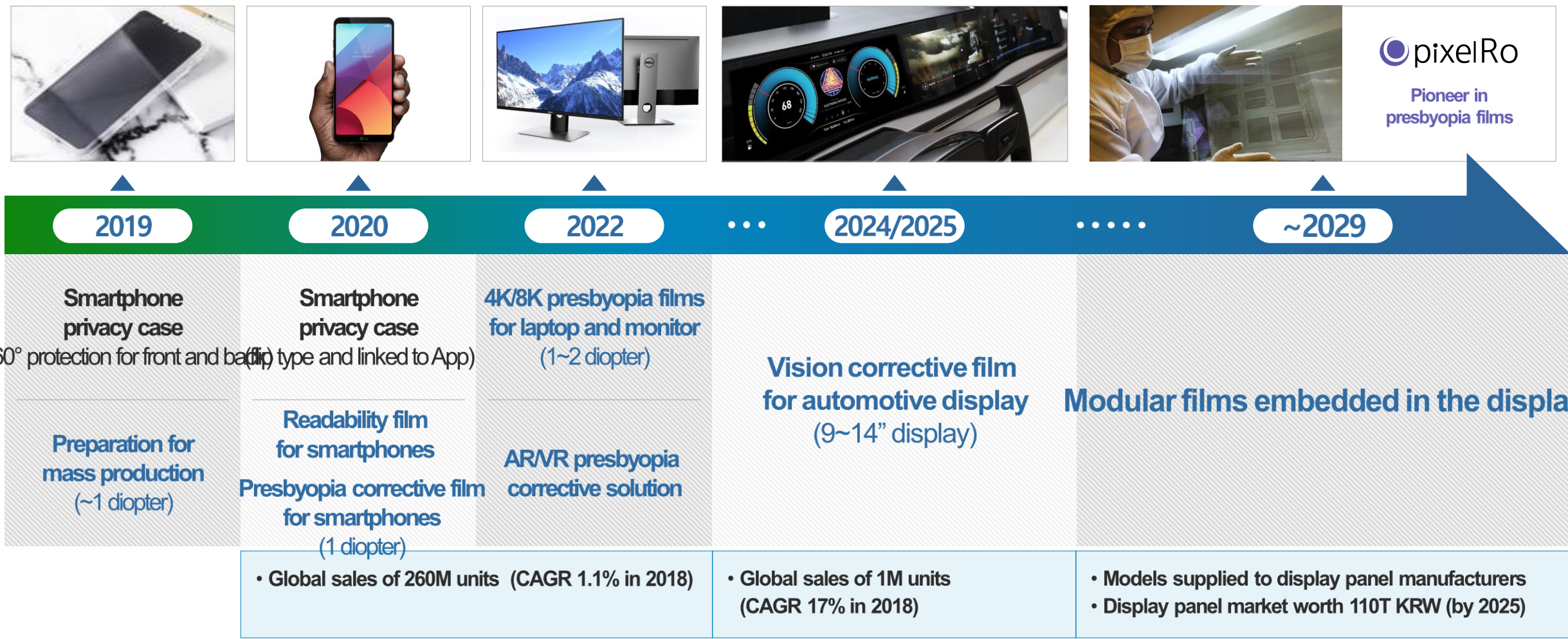
- Launching of the privacy film, followed by readability/presbyopia films
- Securing crowdfunding and marketing channels
- Closing an exclusive distribution contract with Chinese companies

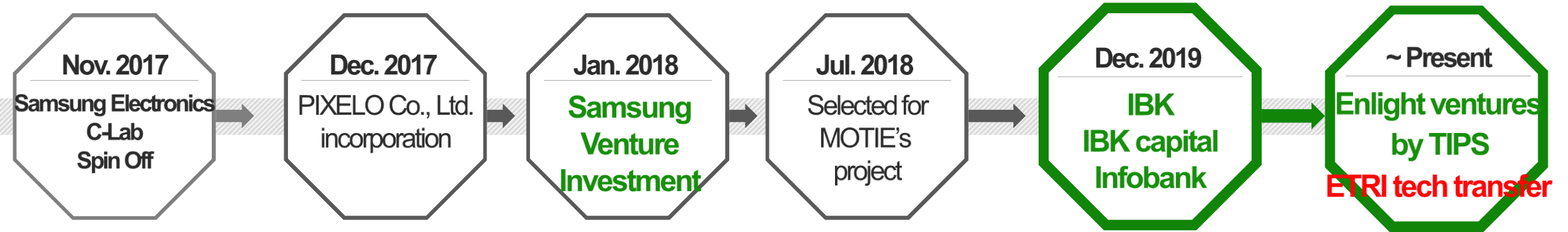
Employing Samsung's Channels

- Global Sources in Hong Kong
- Online 2021 CES and other promo events (IT& Mobile communication and Korea sales & marketing HQ SMAPP)
- Market expansion with B2B products



► Clear Display for everyone, Smart Life for everyone





▶ Co-Founders (total shareholding : 70%)



CEO Kang Seokmyeong



COO Park Moongyu



CTO Park Kisu Ph.D.

SAMSUNG

- Next generation display
- PM of TV healthcare
- PM of Smart signage
- Wearable devices



- Optical device
- Micro projector
- Imaging device

SAMSUNG

- LCD BLU
- PL of projector and optical component
- Advanced display

▶ Optics/algorithm/marketing



Ultra-precision lens manufacturing and molding
partnering with
KITECH

Optics design/analysis
Ph.D.,
VR/LED/Solar energy



Light Field Computing
VR, AR, Holographic



Light Field Analysis
MIRAE Display, Samsung Electronics



Marketing & Strategy
Managing MOTIE's business growth
support project

Investment

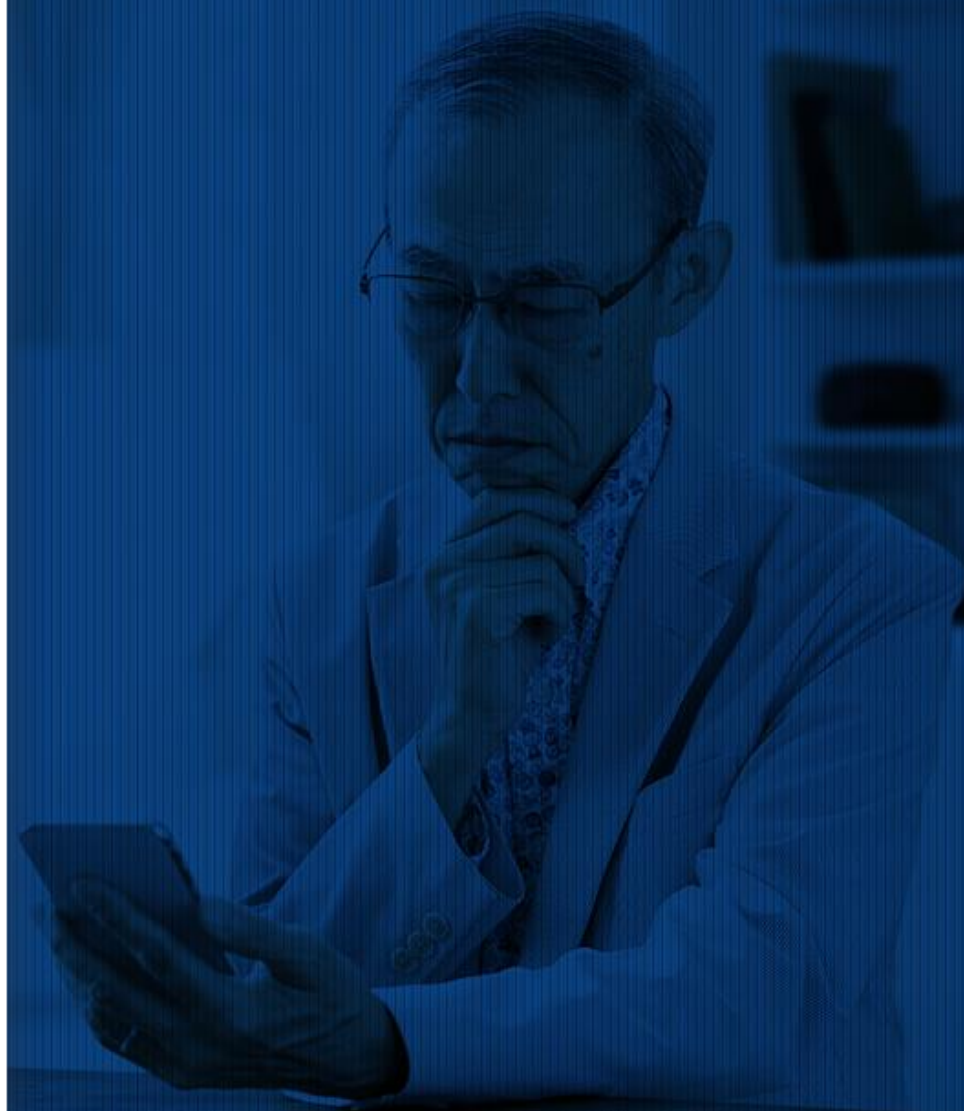


Opening a new era

in presbyopia and display technology



Accelerated by **SAMSUNG**



Product



Vision Corrective Film



Subject: RE: 픽셀로 노안보정 솔루션 관련 문의

안녕하세요
일전에 한번 연락 드렸던 SK텔레콤 정민혁입니다

코로나 이슈로 제품 상황과 준비에 더 바빠질 것 같습니다

최근 픽셀로 홈페이지에 시력 보정 솔루션 관련 업데이트된 내용이 있어 제품에 대한 이해를 더 자세히 할 수 있었는데요
제품 상황화 관련 타겟으로 생각하시는 스마트폰 모델이 있는지, 출시 시점 필름과 App이 동시에 상용화 되는지 등 궁금한점이
있어 연락 드렸습니다

미주 판매

JL Jason Lee <laserexpert@gmail.com>
2020-08-22 오전 4:24

받는 사람: info@pixelro.com



Privacy Solution 및 Vision Correction Solution 에 관한 회의 요

김 kim@samsung.com>
info@pixelro.com에게

Confidential and Privileged Attorney Client Communication



삼성전자

IT& Mobile communication
Advanced display lab

수 신: pixelRo

발 신: 삼성전자 무선사업부 선행Display Lab. 김

안녕하세요. 삼성전자 무선사업부 선행Display Lab. 김

다름이 아니라, pixelRo의 Privacy Solution 및 Vision Correction Solution에 관하여 제품이 적용이 가능한

물론 현재 케이스로서의 적용이 아닌,

보호필름 또는 디스플레이 패널에 MLA를 추가하거나, 소프트웨어 렌더링을 통하여 가능할까 하셔서 연락

담당자를 안내해주시면 담당자와 회의를 가지려고 합니다.

감사합니다.

- 김



MNO division in Smart Device HQ

노안 교정 솔루션 관련 문의의 건_20200811

S sohyunkim@omcoltd.com <sohyunkim@omcoltd.com>
2020-08-19 오후 5:14

받는 사람: info@pixelro.com

타이완 글로넷 회사 소개서 첨부합니다

GS glonet sam <glonet.sam@gmail.com>
2020-08-21 오후 3:25

Vision Protection



상세정보 기본정보 구매후기 (123) 제품문의 (69)

88%의 구매자가 만족했습니다.



123명 참여 ?

구매후기는 후기내역에서 작성하실 수 있습니다. >

애들 컴퓨터 수업을 많이하다보니 걱정되어서 구매했는데 보자마자
이건 꼭 사야된다라고 생각했어요. 너무 안심되고 좋아요.

신문지 2시간 전

진짜 눈이 한결 편해졌어요.
잘 쓰겠습니다~ ^^

유미선 2시간 전

상세정보 기본정보 구매후기 (123) 제품문의 (69)

좋아요
눈이 덜 피로해요



김기숙 2020.07.30

아이의 눈이 덜 피로하다며 좋아하네요^^

태양* 010 - 7704 - 6036 2020.07.29

눈이 많이 피곤해서 힘들었는데
참 좋아요
감사합니다

고맙습니다 ^^~♡ 2020.07.29

더블모니터를 쓰다보니 화면 큰 모니터때문에 장시간 집중시 눈이
아팠는데요. 브라운관 설치하니 확실히 눈이 덜 피로하고 빛반사나
눈시러움이 덜하네요. 아이들 온라인 수업때문에 두개 샀는데, 제게
도 하나 더 사려고 재구매 공지 기다리고 있습니다

이진호 2020.07.29

Product



모니터 속 프라이버시를 지켜줘

메신저를 통한 업무 공유로 인해 개인 정보가 모니터에 그대로 노출되기 쉽죠. 업무에 지장을 주지 않으면서도 프라이버시 가득한 모니터 화면을 가려주는 SNS보안관이 필요한 시점입니다. 실용성을 겸비한 데스크테리어 제품으로 설치도 간편합니다.



정보를 보호해 주는 모니터 필터

중요한 업무 정보들과 사생활을 담고 있는 모니터 화면의 정보보호를 위해 모니터 필터를 제안합니다. 마이크로루버 기술로 제작되어 측면 30° 이상 각도에서는 화면이 보이지 않아 개방된 공간에서도 안심하고 사용할 수 있습니다. 거치식 구조로 설치 부담도 없습니다.



블루라이트를 차단해 주는 스마트폰 보호 필름

독일의 공신력 있는 기술 검사 협회에서 블루라이트 감소율을 입증받은 스마트폰 보호 필름입니다. 블루라이트 차단 효과뿐만 아니라 각종 균의 증식을 99.9% 차단해주며, 스마트폰의 액정을 외부 충격으로부터 보호합니다.

