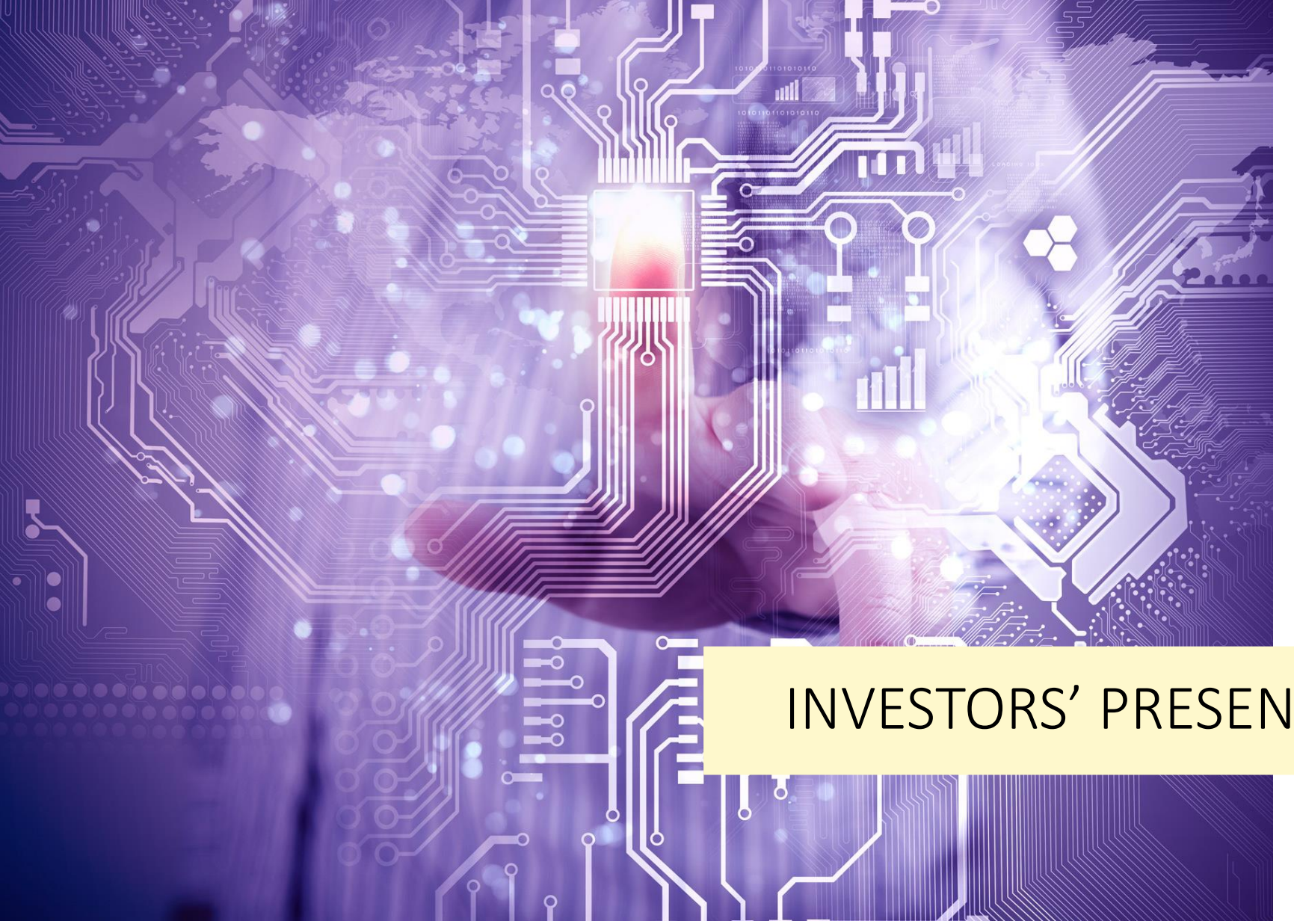


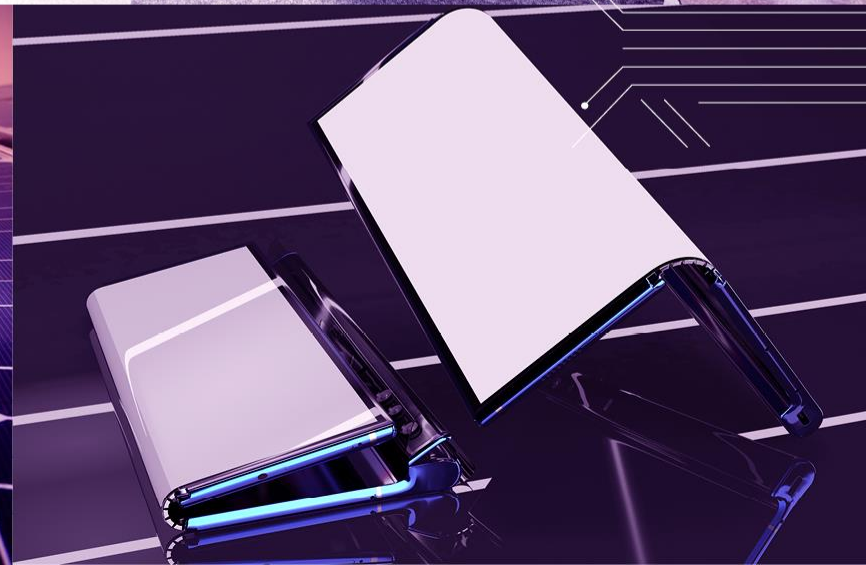
XTPL®

shaping global nanofuture

INVESTORS' PRESENTATION FOR Q3 2019

XTPL S.A.

November 27, 2019



AGENDA

EQUITY STORY

1. TECHNOLOGY	2. APPLICATIONS	3. VALUE	4. MARKET	5. COMMERCIALIZATION
6. PIPELINE	7. EVENTS	8. FINANCE	9. KPIs	10. TEAM

VISION

EQUITY STORY

XTPL develops the most precise printing technology in the world applicable in the rapidly growing electronics market.

Value of printed electronics market in 2018

$ 10 billion

$ 74 billion

Global value of printed, flexible and organic electronics market in 2030

Number of application fields in which the company is currently commercializing its technology

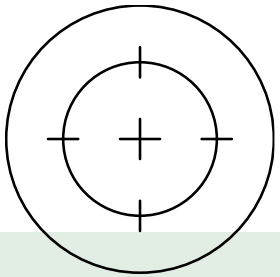
2

7

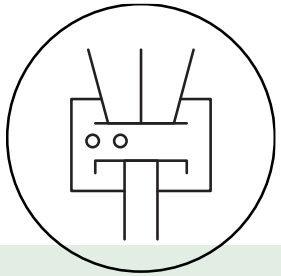
Number of verified application fields in which the company will commercialize in the next steps

TECHNOLOGY BREAKTHROUGH

XTPL’s nanoprinting method is ground-breaking. This is because of a unique combination of several features:



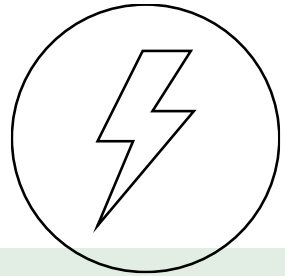
it offers the level of **precision that cannot be achieved** by any other printing method in the world



it allows for the traditional advantages of print – such as **scalability, cost effectiveness, simplicity and speed** – to be used in production of advanced electronics

additive method

it ensures significant time and material savings



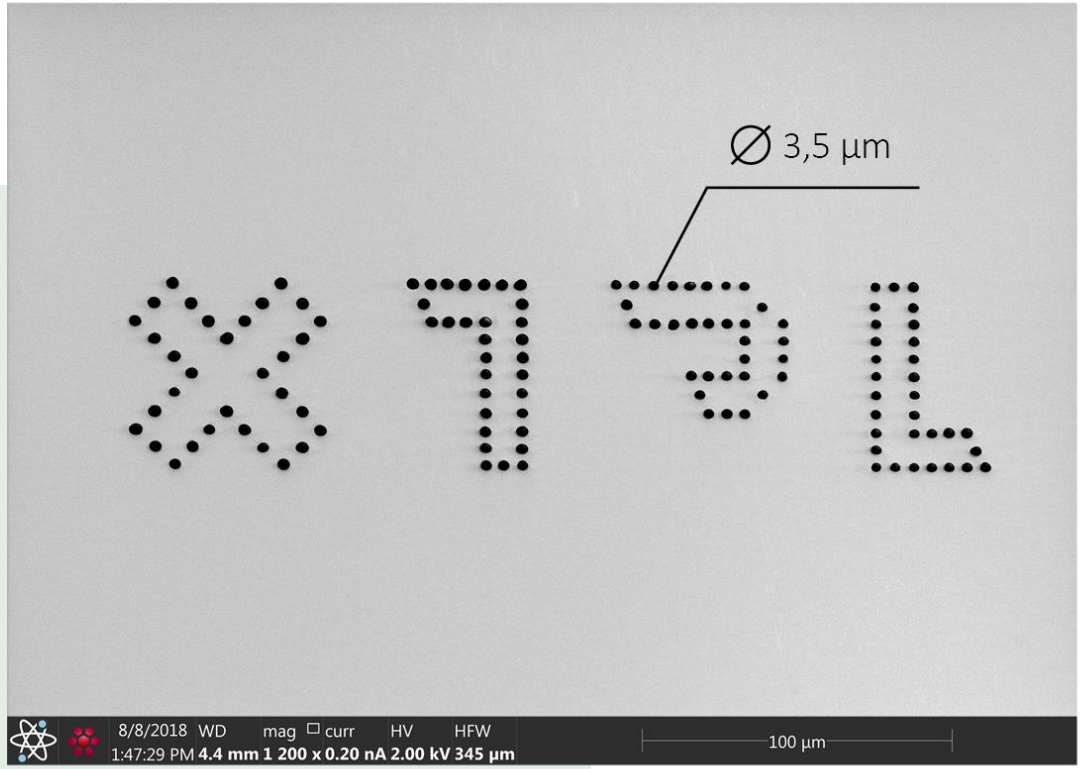
it does not require electric field, which fully **eliminates the risk of damage** caused by such field to any electrically active components

CURENT STANDARD
The minimum feature size is 20 µm

Due to the progressing miniaturization and growing complexity of devices, the market expects precision at the level of single micrometers. Such a precision cannot be provided by any printing method currently available on the market.

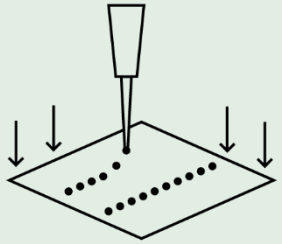
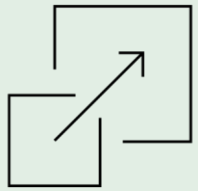
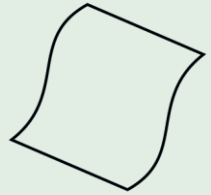
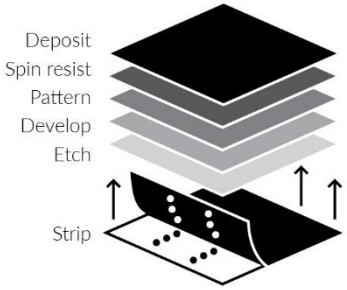
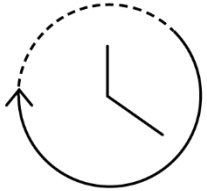
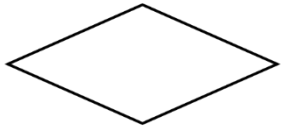
For example, microdots which are currently achieved on the market are usually around 50 µm in diameter, the minimum being 20 µm, while XTPL at present reaches dots of 1 µm in diameter and plans to go even below this limit.

XTPL METHOD
The minimum current feature size is 1 µm



TECHNOLOGY

ADDITIVE VS SUBTRACTIVE METHOD

	APPLICATION	TIME AND COSTS	ENVIRONMENT	SUBSTRATE
ADDITIVE	 Precise application/ simple process	 Effective and flexible	 Safe for the environment	 Most substrates/ even curved ones
SUBTRACTIVE	 Removal of unnecessary material to obtain a pattern/ multi-stage process	 Time and material consuming	 Requires highly corrosive solutions	 Only flat substrates

COMPARISON OF METHODS

XTPL nanoprinting technology eliminates **all the disadvantages** of methods comparable in various application fields

PARAMETERS	INKJET	EHD	LCVD	LITHOGRAPHY	XTPL
precision	low up to several tens of micrometers	high up to single micrometers	average up to several micrometers	very high at the nanometer level	high up to single micrometers
additive method	yes	yes	yes	no subtractive method involves removing of excess material	yes
toxic substances	none or negligible	none or negligible	yes very toxic, difficult-to-neutralize gases	yes photoresist and chemicals used for removing material from the substrate	none
cost-effectiveness	high	high	low a small amount of gas effectively used in deposition	low excess material must be removed from the substrate; the photoresist cannot be used multiple times	high
simplicity	high one-step process	high one-step process	average one-step process, but the use of gases requires complex handling	low multi-step process, needs to be handled by a group of qualified specialists	high one-step process
risk of damage by electric field	none	high applied voltage > 1 kV	none	none	none

ENTRY BARRIERS

1.

Technology protected by international patent applications

2.

The results expected by the market can only be achieved by the unique interaction between the device, the printing process and the ink

3.

The cost of the technology being copied and the risk of failure are very high due to its unique nature

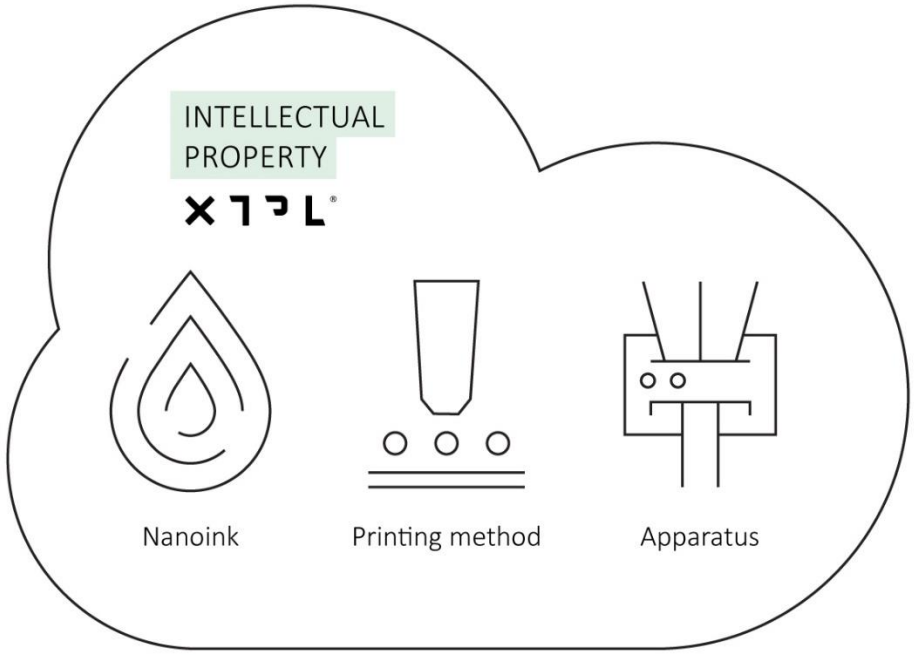
The market has been waiting for such solution for years, but so far no company has been able to provide it

PROTECTED INTELLECTUAL PROPERTY

XTPL’s global solution is being systematically secured by expansion of the patent cloud. The company has already submitted 10 international patent applications and declares to strongly increase this number by the end of 2020 (25 new submissions).

Unique and well-protected intellectual property

- is a product
- determines the company's market position
- significantly affects the company's value
- allows to gain a competitive advantage over other market players
- enables safe commercialization
- guarantees appropriate negotiating position before commercial contracts are signed



§

Gill Jennings & Every LLP, London UK

K&L Gates, Palo Alto, CA, USA

APPLICATIONS

PLATFORM CHARACTER

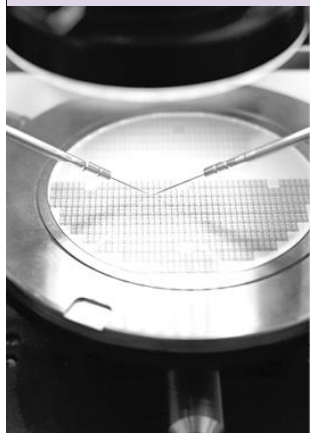
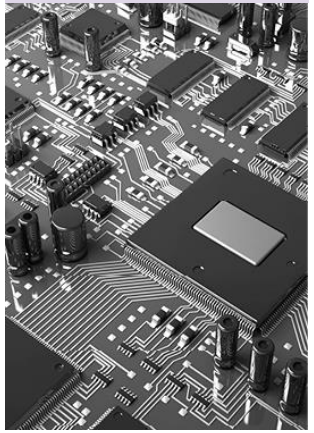
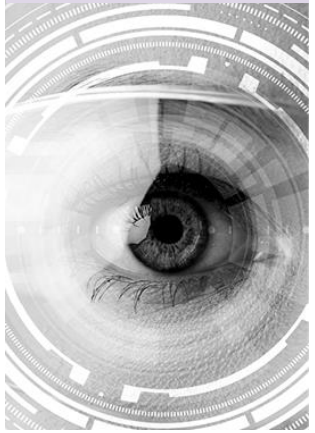
ADVANCED ELECTRONICS

- The global value of printed, flexible and organic electronics market amounts to $ 37.1 billion in 2019
- Its estimated value in 2030 is $74 billion
- CAGR 2019–2030 – 6.5%

STRONG MEGATREND

Production of technologically advanced devices using cost-effective and scalable methods.

XTPL has developed a **technology** that **enables that advance.**

SMART GLASS	DISPLAYS	SEMICONDUCTORS	ADVANCED PCBs	SECURITY PRINTING	BIOSENSORS	PHOTOVOLTAIC CELLS
						
$1.45 bilion CAGR 2019-2026 16.3%	$28.7 bilion CAGR 2019-2023 12.6%	$469 bilion CAGR 2019-2024 4.1%	$55.4 bilion CAGR 2019-2024 4.49%	$51.8 bilion CAGR 2019-2024 12.5%	$3.9 bilion CAGR 2019-2029 0.98%	$19.4 bilion CAGR 2019-2023 19.4%

VALUE BENEFITS

XTPL technology offers unique benefits for each application field:

SMART GLASS

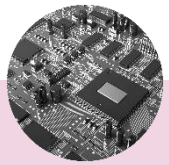
- significant reduction of glass conversion time
- improved product performance
- opening to new market segments

DISPLAYS

- increasing production yield
- reducing the number of rejects
- increasing the resolution
- solution for flexible displays
- enabling further miniaturization

SEMICONDUCTORS

- precise connection of microelectronic circuits with PCBs
- reducing the size of junctions and electronic connections of integrated circuits
- improving work efficiency by effective heat extraction from the integrated circuit



ADVANCED PCBs

- maximum density of conductive structures
- potential for further miniaturization
- cost effective and scalable process
- increasing production yield

ANTICOUNTERFEITING

- previously unattainable system complexity
- virtually unlimited number of combinations (inimitable)
- versatility of: substrates, implementation and control
- cost effective and scalable solution

BIOSENSORS

- simple and fast detection
- comprehensive solution for points of care
- cost effective and scalable production
- enabling further miniaturization

PHOTOVOLTAIC CELLS

- energy efficiency increased by about 4–5%
- cost effective and scalable production

FIRST TARGETED MARKETS

SMART GLASS

Application: **smart glass**

Size of the market: 2019 – $ 1.45 billion

Market entry strategy:

Market readiness: advanced PoC

Market partner: yes (United States)

Competition:

- DNP
- Goss International
- Gunze
- Komori

DISPLAYS

Application: **open defect repair (ODR)**

Size of the repair market: 2019 – $ 270.4 million

Market entry strategy:

Market readiness : integration with partners' technological processes

Market partner yes (group of entities interested in purchasing the licence)

Competition:

- Orbotech (KLA-Tencor)
- V Technology
- HPK
- Han's Laser
- Charm Engineering

MARKET

CASE STUDY

SMART GLASS

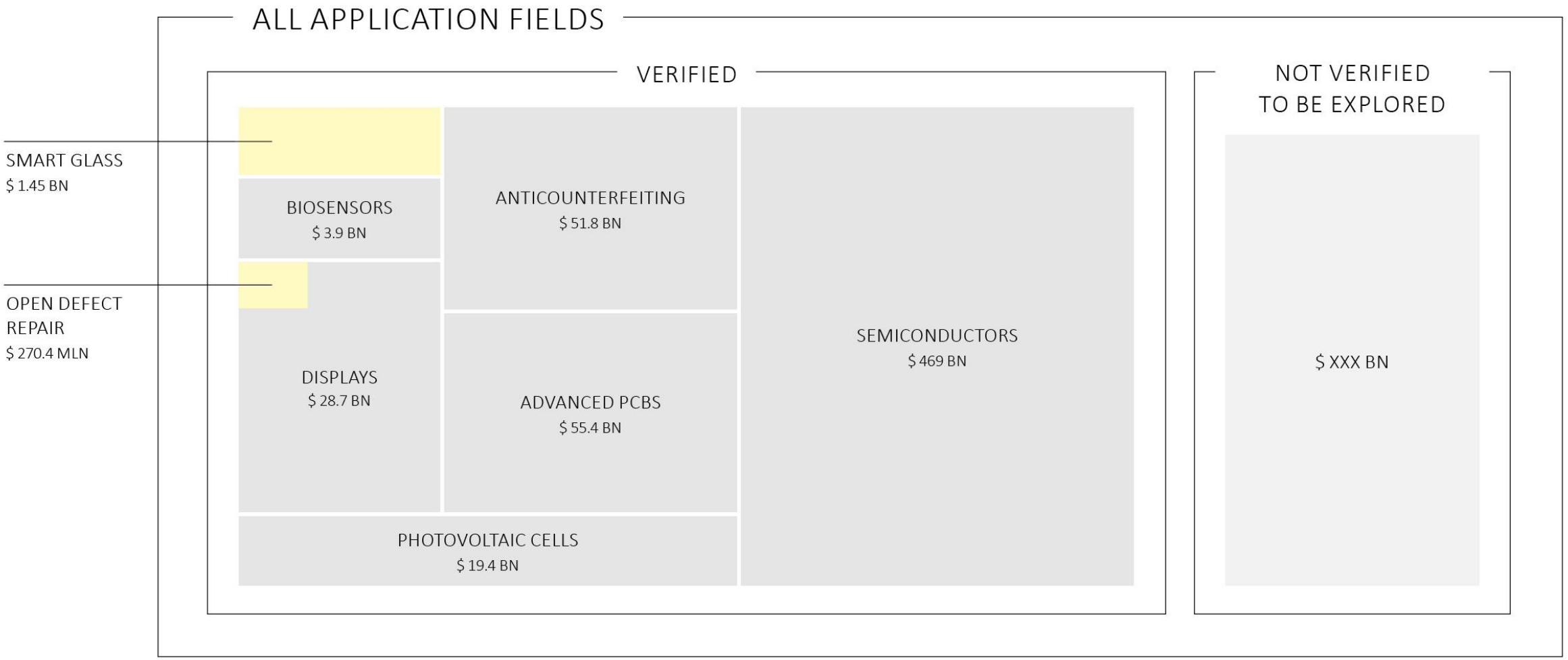
XTPL technology used for creating invisible conductive structures for glass conversion

from 30 to 3 min	faster smart glass conversion from light to dark and vice versa
< costs	cost-effective and scalable production method that will allow competitive offering of products for investments in the construction industry, where smart glass reduces the building's energy costs
10%–31%	increasing the value of the building after obtaining the relevant ecological certificate; for example, in 2018, more than 67,000 buildings in the United States were registered for LEED certification vs. fewer than 32,000 in 2010
70%	technology that opens up new technological opportunities, e.g. for the automotive market, which accounts for 70% of the whole smart glass sector
90%	extremely high (over 90%) transparency, unattainable by other methods

DISPLAYS

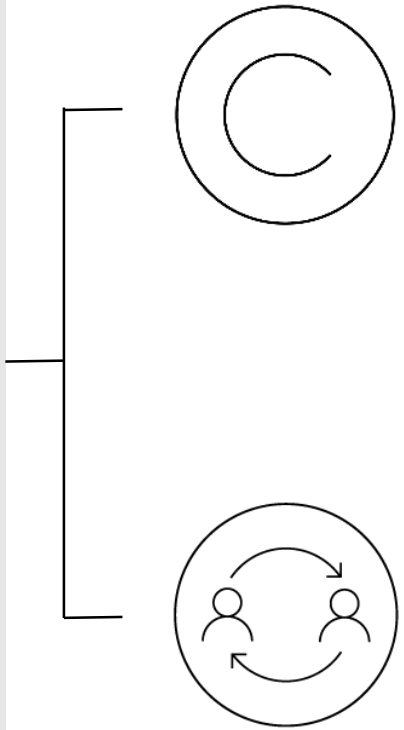
XTPL technology used for repairing open defects occurring during display production

even 50%	rejects in the production of displays can reach up to 50% (if defects occur), especially where a new generation of displays enters production
50–70%	in the case of displays, the cost of semi-finished products is 50–70% of the cost of the final product, so manufacturers cannot afford to give up repairing defects
<number of rejects	successful repair of the defects occurring at the production stage can increase production yield by reducing the number of rejects
from 10 to 30%	improving production yield is one of the main factors for increasing competitiveness, e.g. in 2018 BOE increased efficiency from 10% to 30%, and further progress is planned to compete with Korean producers whose efficiency is around 80%
< 3 µm	along with the progressing miniaturization coupled with an increase in resolution, manufacturers expect significantly higher precision, with the width of conductive structures of <3 µm; the XTPL method is the only one in the global market that meets this parameter and other manufacturers' requirements.


ALL APPLICATION FIELDS
VERIFIED
NOT VERIFIED
TO BE EXPLORED
SMART GLASS
$ 1.45 BN
OPEN DEFECT
REPAIR
$ 270.4 MLN
BIOSENSORS
$ 3.9 BN
ANTICOUNTERFEITING
$ 51.8 BN
SEMICONDUCTORS
$ 469 BN
DISPLAYS
$ 28.7 BN
ADVANCED PCBS
$ 55.4 BN
PHOTOVOLTAIC CELLS
$ 19.4 BN
$ XXX BN

BUSINESS MODEL

XTPL commercializes its technology by selecting a model that is best suited to the specific application field



LICENSING

- the company develops technological solution dedicated to a particular application field and license it to a partner;
- on its basis, the partner builds devices that allow the technology to be used in the industry;
- the company generates revenues from one-off license fees for providing the license, and recurring license fees (royalties) related to the sale of devices in which the developed technology is implemented; recurring revenues are also achieved from the sale of nanoink.

STRATEGIC PARTNERSHIP

- the company develops technological solution dedicated to a particular application field; the solution is then commercialized in cooperation with a strategic partner;
- the company enters into e.g. a joint venture agreement with the partner;
- commercialization tasks are divided between the partners in accordance with their competencies and potential;
- the company participates in profits achieved through the joint venture.

STAGES OF THE PROCESS

TARGETING	ACTIVE PROSPECTS	PROOF OF CONCEPT	DESIGN IN	DESIGN WIN	COMMERCIAL CONTRACT
finding & selecting prospects; early contact	exchange of technical specifications & identification of needs	multi-stage technology validation & concept confirmation (TEA)	project involvement of partners, work on dedicated solution; verification of IP position (MoU, JDA)	confirmed choice of the solution & negotiations of main business conditions (TS)	negotiations & signing of the final agreement
Likelihood of finalization with a contract:		40-50%	60-70%	90%	

IP PROTECTION
continuous process in a technology company

TIME					
3-6 MONTHS	3-6 MONTHS	9-15 MONTHS	6-12 MONTHS	6-9 MONTHS	2-4 MONTHS

TEA – Technology Evaluation Agreement – an agreement regarding testing and optimization of the technology in accordance with the partner's specification

MOU – Memorandum Of Understanding – expresses the parties' intention to work together to achieve the agreed commercial goal – an effective and scalable implementation of the company's solution for use in the partner's devices or its production line; often treated as an invitation to negotiations

JDA – Joint Development Agreement – joint technological development agreement co-financed by partners; first revenues for the technology supply company

TS – Term Sheet – document presenting the essential conditions to be met for the conclusion of a business contract; after its execution and often on its basis a final agreement is prepared between the parties

PIPELINE

Active projects with large international corporations

7

41

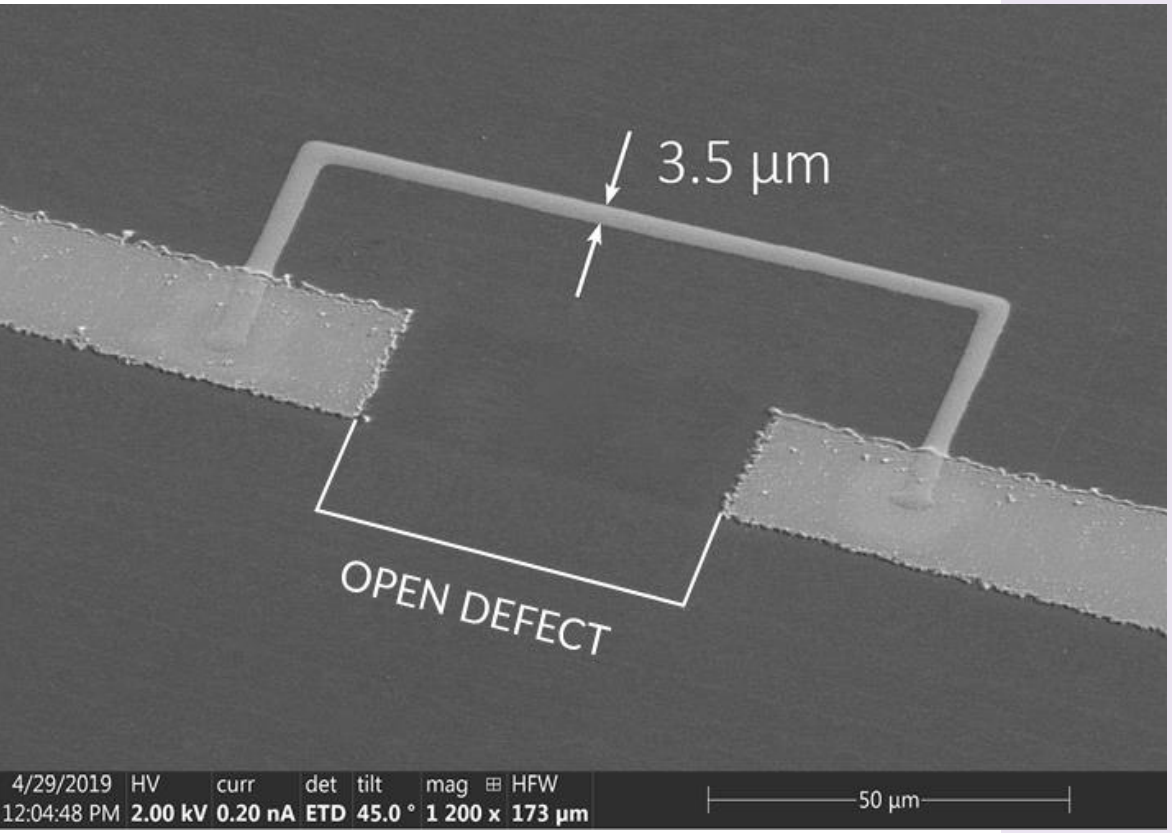
Verified sales prospects in several application fields

CLIENT A	CLIENT B	CLIENT C	CLIENT D	CLIENT E	CLIENT F	CLIENT G
Manufacturer of devices for display production	Manufacturer of devices for display production	Manufacturer of devices for display production	Manufacturer of devices for display production	Displays manufacturer	Displays manufacturer	Smart glass manufacturer
First stage assumed the sale of a comprehensive solution (longer time to market); we are currently waiting for the decision regarding the licensing model	Technology licensing	Technology licensing	Technology licensing	Technology licensing	The decision will be made after finalizing the PoC phase	Technology licensing / Strategic partnership
Displays – open defect repair	Displays – open defect repair	Displays – open defect repair	Displays – open defect repair	Displays – open defect repair	New generations of displays - improvement of electrical conductivity	Smart glass

SUCCESSFUL ISSUE OF SHARES

- successfully completed issue of shares for PLN 10 million
- share capital increase through a private placement
- shares taken up both by Polish individual investors and Western institutional investors
- nearly a half of the stock was acquired by foreign entities
- the purpose of the issue was to give a strategic boost to the commercialization in the area of repairing open defects in high-resolution displays, and to support further development of the patent cloud

COMMERCIALIZATION – OPEN DEFECT REPAIR



- identification of six leaders in the market of repairing open defects in displays: LG, Charm Engineering, V-Technology, Orbotech, HPK, Han's Laser
- the company is in talks (at various levels of progress) with five of them
- a vast majority of these firms have approached XTPL from their own initiative
- the company's decision to slow down the talks with Chinese Han's Laser due to:
  - – active steps being taken with other interested clients who prefer licensing, a model more favourable for the company
  - – analysis of the preferred terms of cooperation and the intention to choose the best offer
- choosing partners with a strong position in the FPD market and those who potentially might be able to achieve the biggest additional benefits by implementing the XTPL technology
- implementation of an effective open defect repair method will mean a market share increase for some partners
- this is expected to have a positive impact on the increased royalties for XTPL in the future
- a choice of partners that ensures the highest probability of finalization of sales and achievement of optimum financial parameters of a future cooperation

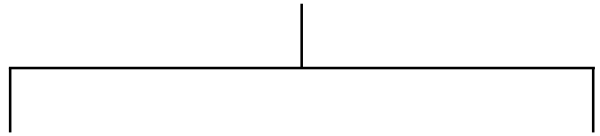
COMMERCIALIZATION – SMART GLASS

- 3rd phase of the proof-of-concept project for a leading US manufacturer from the smart glass industry
- the main benefit expected to be achieved from implementation of the XTPL technology is faster smart conversion from light to dark and vice versa.
- this will significantly improve the user experience of the partner's products, and may open for the partner new, previously not supported, market segments
- the purpose of the current testing phase is to check new formulations of XTPL inks resistant to, e.g. high temperatures (positive outcome of initial tests in the company's laboratories)
- if further specifications are met and if the ongoing tests confirm effectiveness of the XTPL technology, this may result in the company and the partner developing production solutions based on the know-how and intellectual property of XTPL under e.g. a Joint Development Agreement (JDA), those works the partner will co-finance
- two models considered as the final form of commercialization: technology licensing or strategic partnership

TECHNOLOGY LICENSING

TWO PAYMENT STREAMS

to the licensor (XTPL in this case)



INITIAL LICENSE FEE

a one-off payment made after signing the agreement; it is usually divided into tranches (an initial payment and payments related to the achievement of milestones and transfer of knowledge related to the licensed technology); the payment is usually effected within 6–9 months of signing the license agreement;

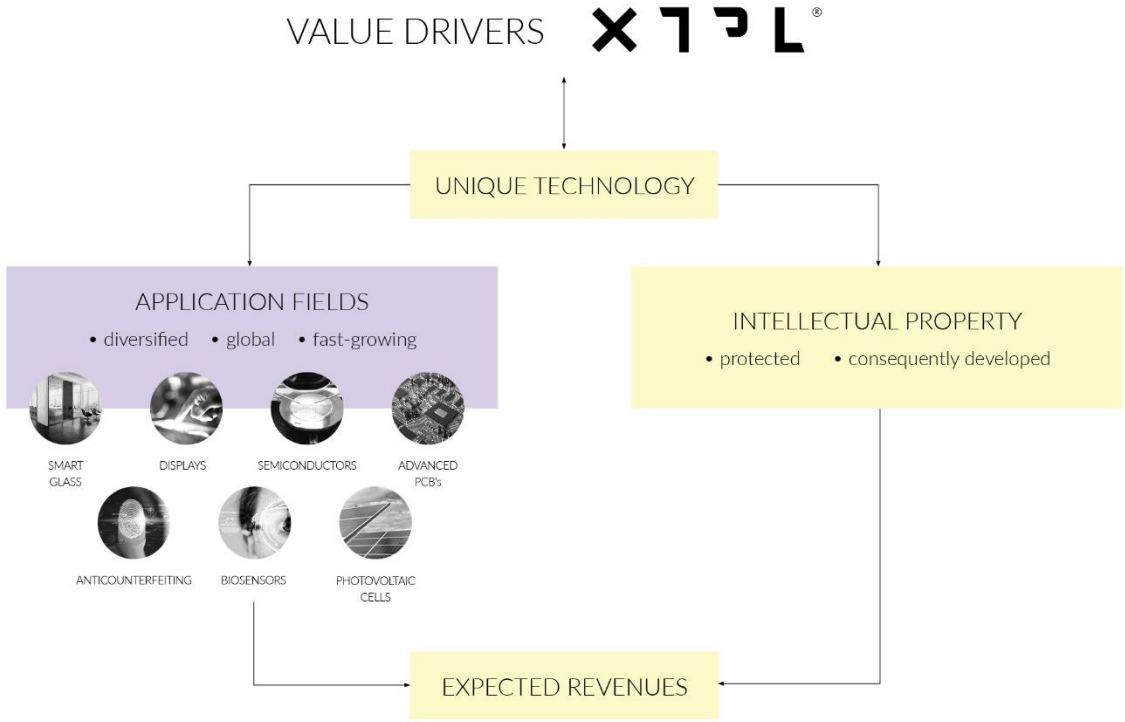
ROYALTIES

regular payments, linked to the volume of sales of devices or products based on the licensed technology; they are usually charged within 12–18 months after the date of the license agreement (the time needed for the licensee to implement the technology in its product development process)

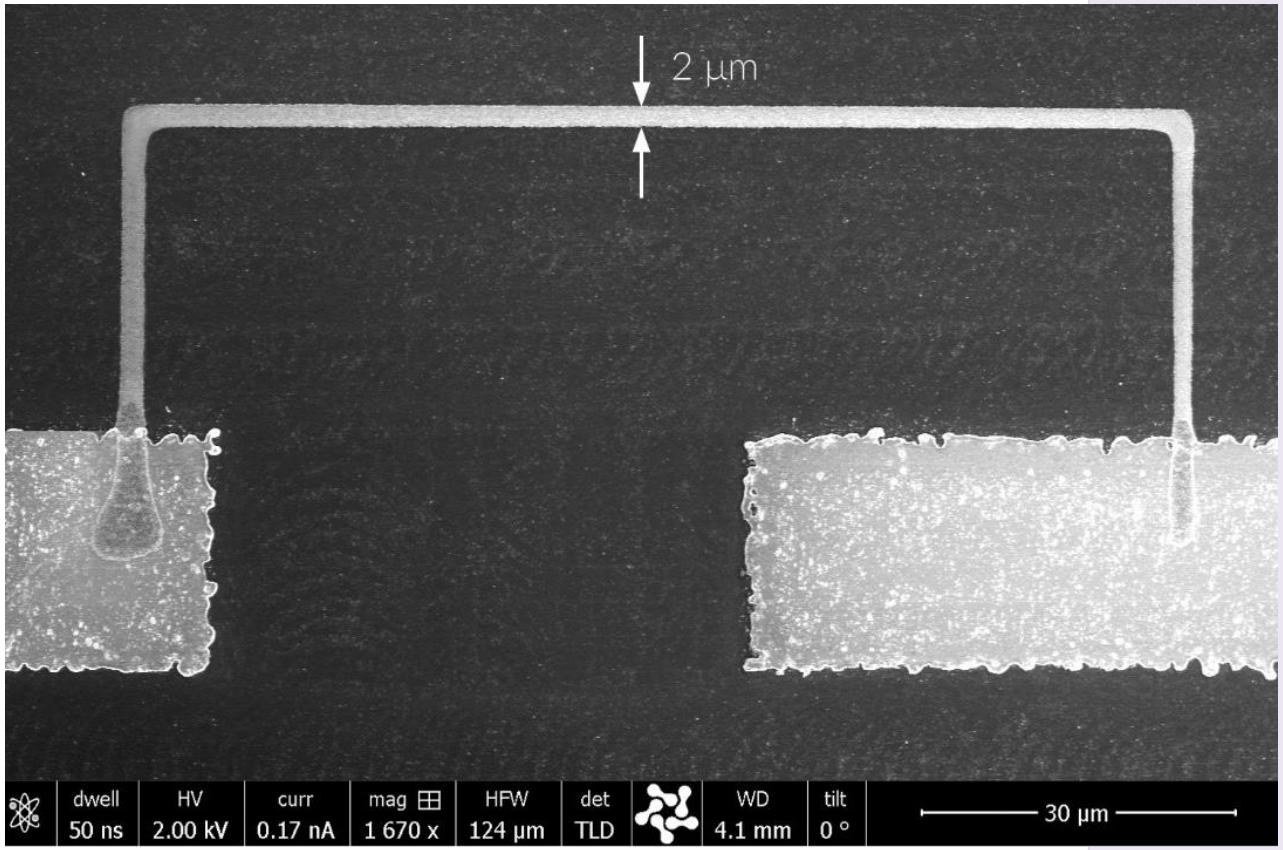
- adoption of a licensing model as a method of commercialization of XTPL technology for open defect repair in the display market
- licensing is preferred by most potential clients
- the model is very attractive for XTPL mainly due to the favourable ratio of expected costs to potential effects – stable and scalable revenues - and the shorter time needed for implementation
- it creates a possibility of using the existing potential of the future licensee to prepare the technology effectively for industrial implementation
- it is the licensee that is responsible for all aspects related to the sale of the final product (logistics, distribution and customer support)

EXTENSION OF THE PATENT CLOUD

- at present, XTPL has 10 international applications.
- the company is planning a substantial extension of the patent cloud (by the end of 2020, it intends to prepare and submit 25 new patent applications)
- for deep-tech companies intellectual property is a product and a competitive advantage, and the size of the patent cloud has a major impact on their value
- from the point of view of a future license, the most important patent applications which XTPL has submitted so far are related to the solutions for use in open defect repair dedicated to the display market
- a high level of intellectual property protection will guarantee safe commercialization and appropriate negotiating position for the company before the first commercial contracts are signed with selected partners



R&D PROGRESS



- given the progressing miniaturization and a simultaneous increase in the resolution of next-generation displays, manufacturers are looking for a higher precision than that offered by the traditional methods available on the market
- what the market needs for the coming years is conductive structures with a width below 3 µm (micrometers)
- in this area, XTPL realizes an additional R&D project, attaining impressive results (photo on the left shows detour with a width of 2 µm printed with the company's additive nanoprinting method)
- obtaining parameters that meet the requirements of not only the current but also future generations of displays will improve the company's negotiating position and will contribute to the increase in the value of the license agreement

COOPERATION WITH BOE

- one of the world's leading players on the display market - BOE - interested in the breakthrough XTPL technology of ultra-precise nanoprinting
- both entities signed an agreement (TEA - Technology Evaluation Agreement), launching the evaluation of XTPL technology by the Chinese partner
- the current stage of cooperation is to confirm the parameters of the XTPL technology and define the scope of modifications necessary to meet the technological need of BOE
- BOE revenues in 2018 amounted to USD 13.9 billion
- according to the Chinese partner's declarations, the success of this stage will allow for commencing the business negotiations with XTPL aimed at signing a commercial contract

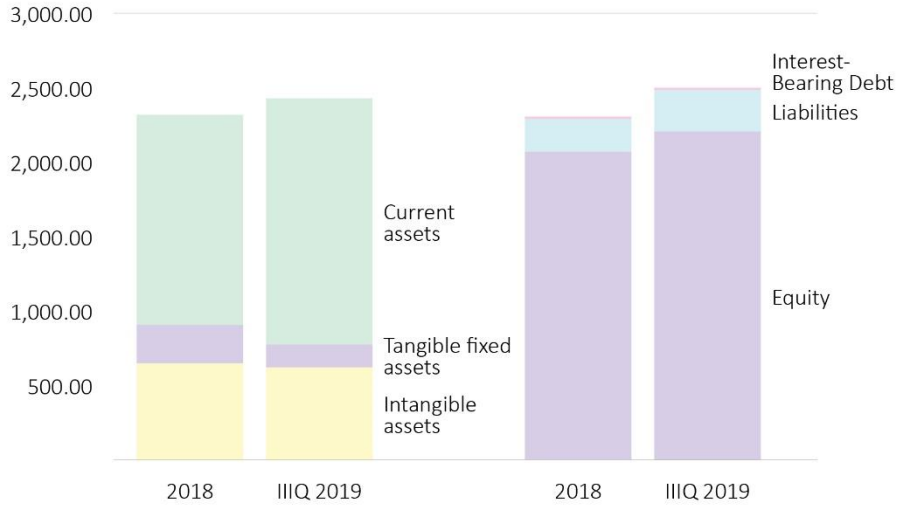
EVENTS AFTER Q3

COOPERATION WITH HPK INC.

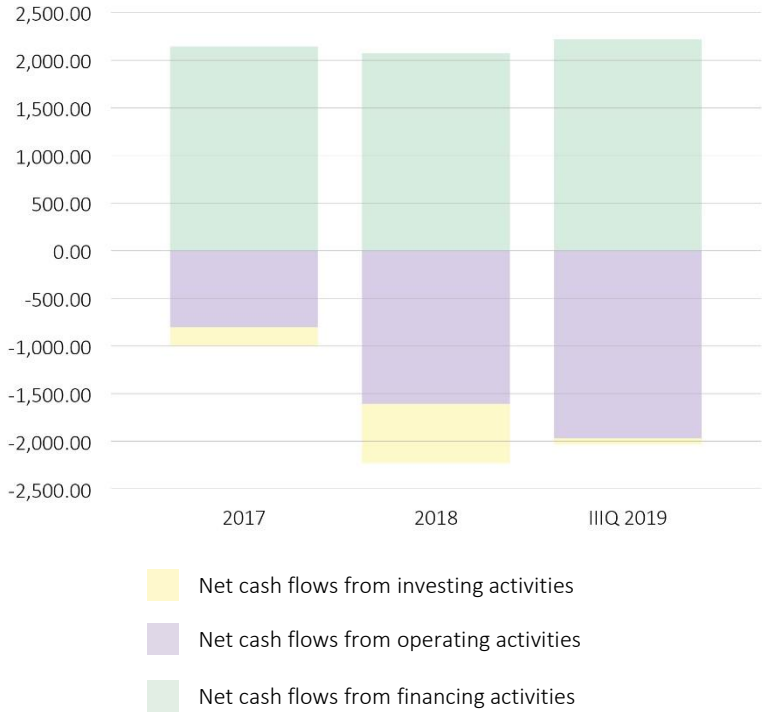
- XTPL and the Korean company HPK Inc., one of the main suppliers of devices for defect repair in displays for LG - one of the world's largest manufacturers of consumer electronics - have signed a Memorandum of Understanding (MoU)
- The MoU opens the path to business negotiations about a license agreement
- Representatives of the Korean partner have just completed a reference visit to XTPL's headquarters in Wroclaw
- If successful, the commercialization of the innovative XTPL technology in the area of open defect repair will usher the company into perspective display sector.

SELECTED FINANCIAL DATA

BALANCE SHEET STRUCTURE



CASH FLOWS



- The company finances its activity from share issues and grants
- There is no interest-bearing debt in the financing structure

* figures in EUR thousand

FINANCE

P&L

	01.01.2018 – 30.09.2018	01.01.2019 - 30.09.2019	
		WITH ESOP	WITHOUT ESOP
Revenue from sales	400	372	370
Research and development expenses	556	1,415	882
Gross profit (loss)	-156	-1,044	-512
General and administrative expenses	954	3,553	1,374
Other operating income and operating costs	-1	-41	-41
Operating profit (loss)	-1,110	-4,638	-1,927
Other financial revenues and expenses	2	14	14
Profit (loss) before tax	-1,108	-4,624	-1,913
Tax	-5	9	9
Profit (loss) attributable to shareholders of the parent	-1,104	-4,633	-1,922
Profit (loss) of non-controlling interests	0	-94	-93
FX differences arising on conversion of foreign affiliates	0	-21	-21
Total comprehensive income	-1,104	-4,560	-1,849

Revenue from subsidies at a constant level. Delays in receiving of the amounts due from financing institutions for reasons independent of the company. In total, funds due and not transferred in the amount of approximately PLN 2 million are expected be credited to the company's account in Q1 2020 at the latest.

Net result of PLN -19.5 million including a one-off event of PLN 11.6 million (recognition of the settlement cost of the incentive program - ESOP - based on shares, non-cash transaction with no impact on the value of assets, equity or stock dilution).

Operating costs of the company under control amounting to PLN 9.7 million (excluding one-off events). Reasons for increase comparing to last year: increased intensity of technological works and commercialization processes.

* figures in EUR thousand

KPIs

license agreement in the area of open defect repair in displays	2020	3	license agreement in the area of open defect repair in displays
further application fields opened by the end of 2020; readiness to implement proof of concept projects in these areas	2	2020	Joint Development Agreement (JDA) in the smart glass area

MANAGEMENT

FILIP GRANEK

MANAGEMENT BOARD
PRESIDENT/ CEO

The creator of XTPL technology and the founder of the company, one of the world's leading specialists in nanomaterials

MACIEJ ADAMCZYK

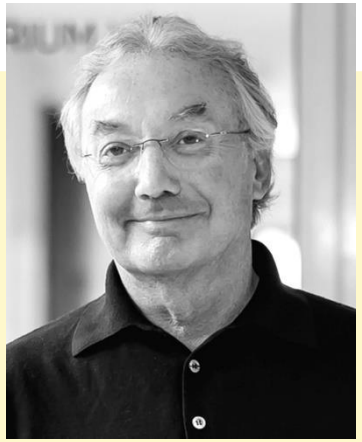
MANAGEMENT BOARD
MEMBER/ COO

A manager with more than 19 years of experience in finance, mergers, acquisitions and capital markets

WIESŁAW ROZŁUCKI

CHAIRMAN OF THE
SUPERVISORY BOARD

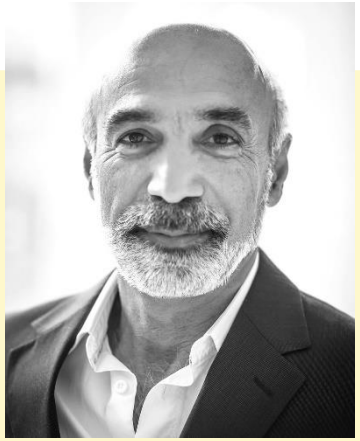
Co-founder and former president of the Warsaw Stock Exchange in Warsaw



HAROLD HUGHES

BOARD MEMBER XTPL INC.

Former CFO of Intel and CEO of Rambus Inc. He has been developing high-tech projects in Silicon Valley for the past 40 years



AMIR NAYYERHABIBI

BOARD MEMBER XTPL INC.

A partner with Benhamou Global Ventures, a VC fund from Silicon Valley which invests in dozens of companies from the digital economy sector

HIROSHI MENJO

BOARD MEMBER XTPL INC.

Co-founder of NSV Wolf Capital, a strategic fund from Silicon Valley. An expert in implementing Japanese entry strategies and forging strategic alliances with Japanese companies

TEAM

Currently over 40 people in Poland and the United States

TECHNOLOGY

an interdisciplinary, well-balanced team with advanced **knowledge & experience** in:

- chemistry
- physics
- electronics
- mechanics
- material science
- numerical simulations

10 PhDs in the team

BUSINESS

business leaders & highly skilled professionals who possess **know-how & experience** in:

- product development
- marketing & communication
- implementing innovation
- finance
- B2B sales
- capital market

... and proven successes achieved in international markets

Aneta Wiatrowska
TECHNOLOGY

Filip Auksztol
BUSINESS DEVELOPMENT

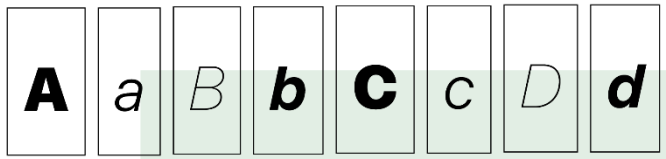
Marta Jankiewicz
INVESTOR RELATIONS

Krzysztof Berezowski
PROJECT MANAGEMENT /PRODUCT DEVELOPMENT

Dariusz Świderek
LICENSING / IP MANAGEMENT

Piotr Kowalczewski
PATENTS

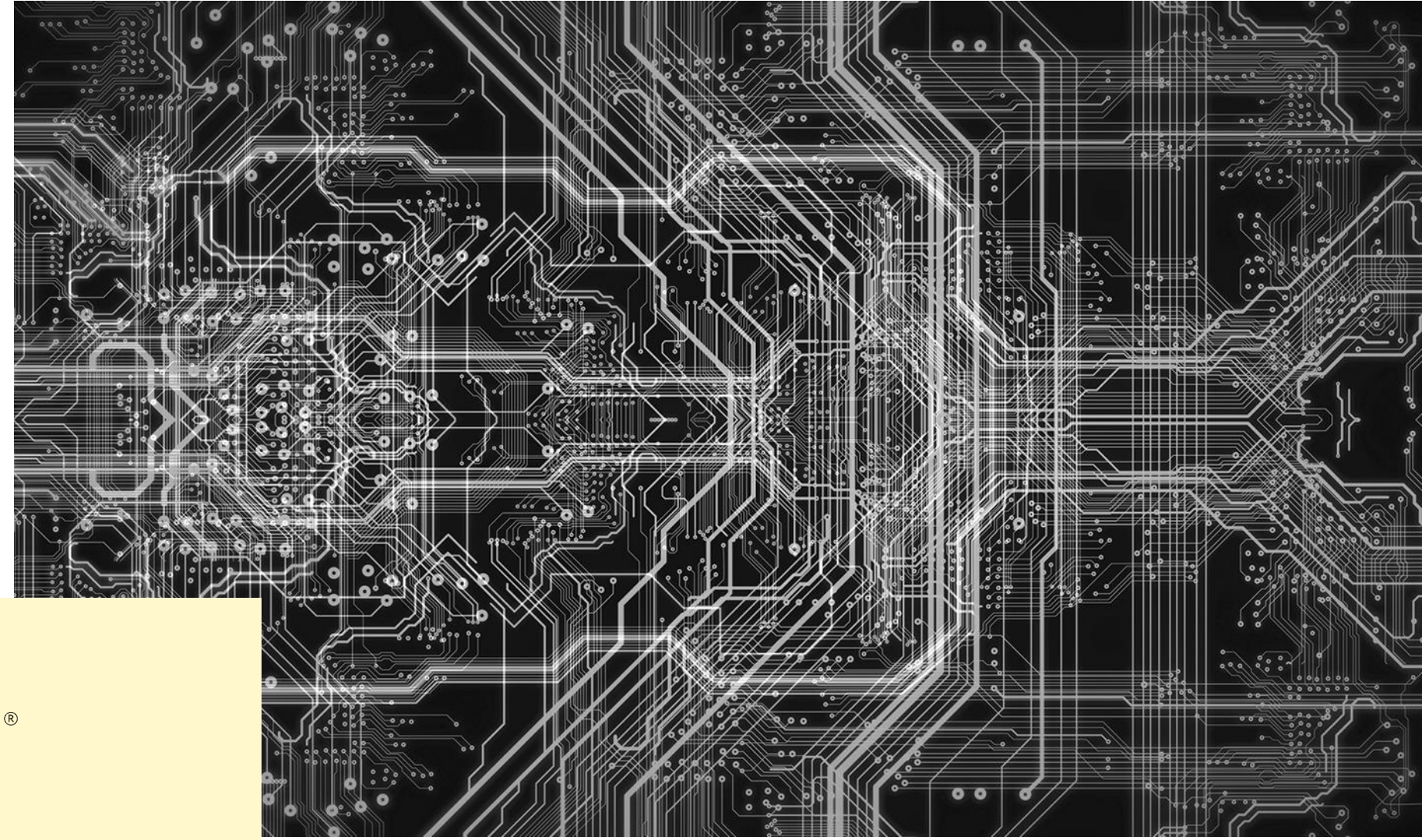
VISION



In the near future, we will print displays, solar cells, biosensors and other advanced elements just as cheaply and quickly as we print newspapers or books today.

This is not just a vision any more.

With XTPL nanoprinting technology, this is a fast approaching reality!



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THANK YOU