



shaping global nanofuture



INVESTOR'S PRESENTATION FOR 2019

XTPL S.A.

April 23, 2020



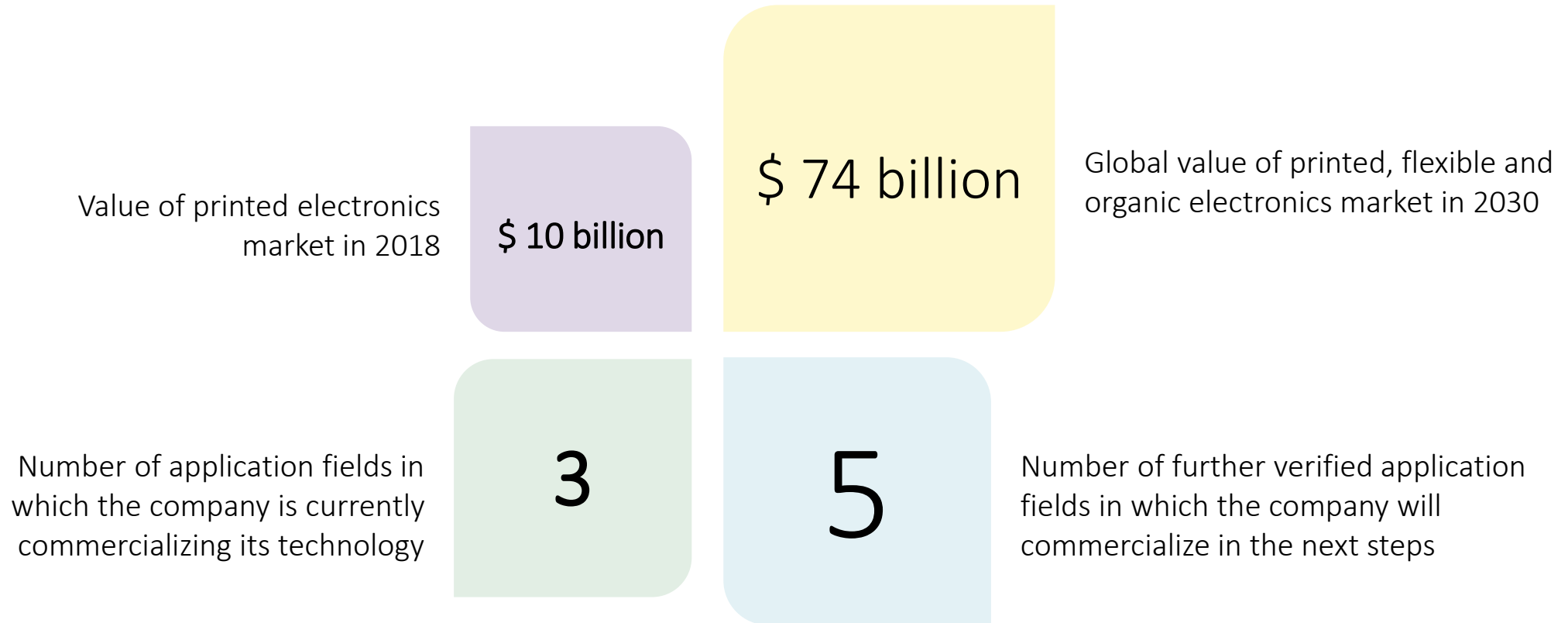
EQUITY STORY

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

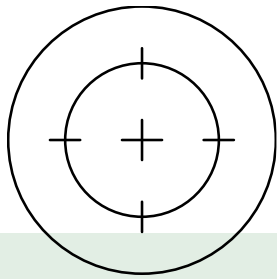
EQUITY STORY



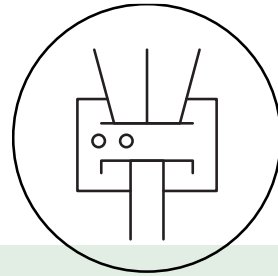
XTPL develops the most precise printing technology in the world applicable in the rapidly growing electronics market.



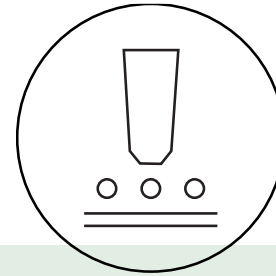
XTPL's nanoprinting method is ground-breaking. This is because of a unique combination of several features:



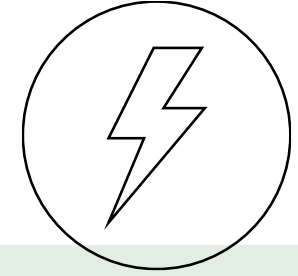
it offers the level of **precision** that **cannot be achieved** by any other printing method in the world



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

CURRENT STANDARD

The minimum feature size is 20 μm

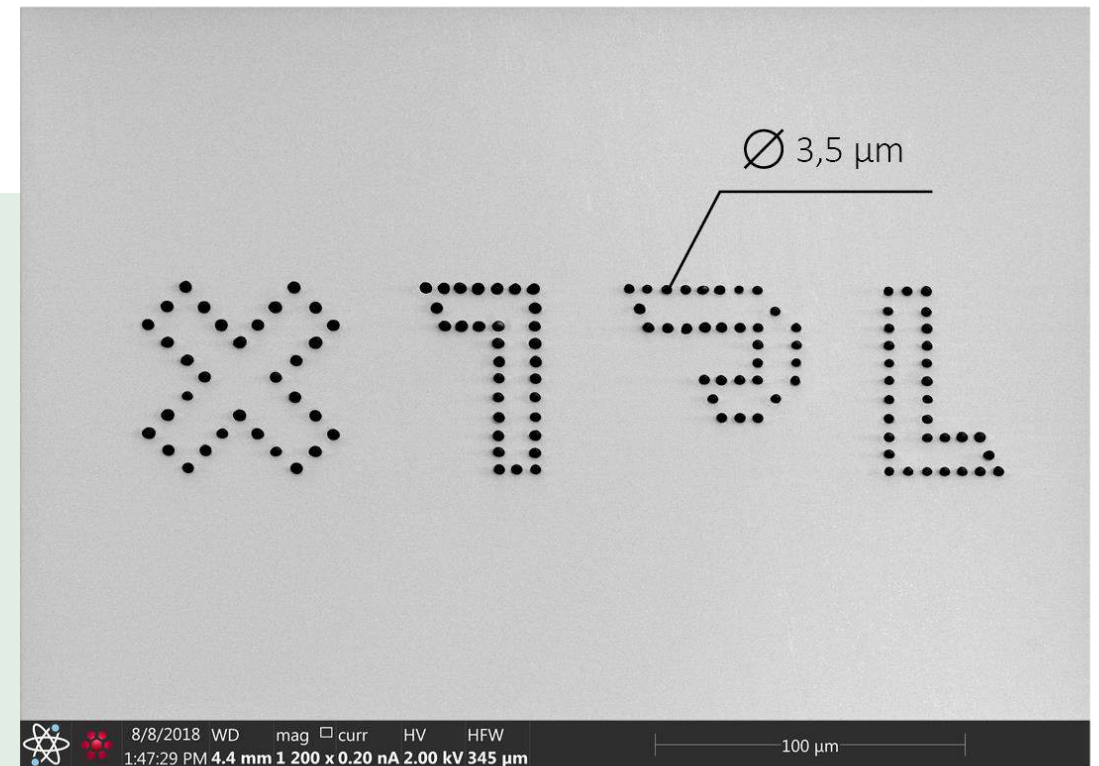
Due to the progressing miniaturization and growing complexity of devices, the market expects precision at the level of single micrometers. Such a precision cannot be provided by any printing method currently available on the market.



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



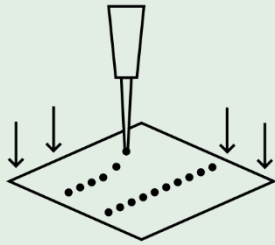
APPLICATION

TIME AND COSTS

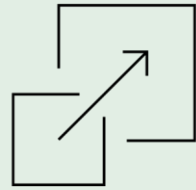
ENVIRONMENT

SUBSTRATE

XTPL[®]
ADDITIVE



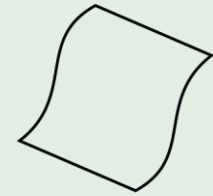
Precise application/ simple process



Effective and flexible

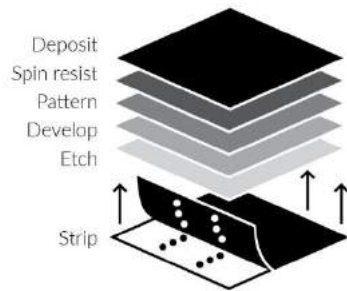


Safe for the environment

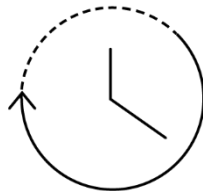


Most substrates/ even curved ones

SUBTRACTIVE



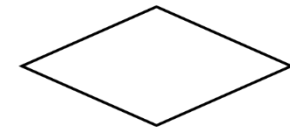
Removal of unnecessary material to obtain a pattern/ multi-stage process



Time and material consuming



Requires highly corrosive solutions



Only flat substrates

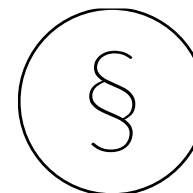
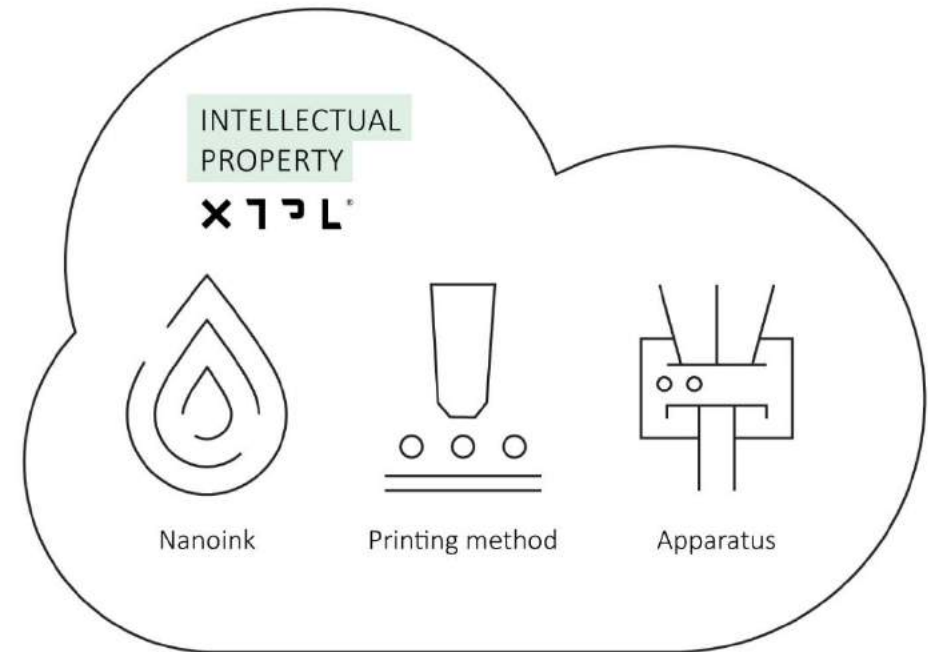
XTPL nanoprinting technology eliminates **all the disadvantages** of methods comparable in various application fields

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

XTPL global solution is systematically secured by expanding the patent cloud. The company has already submitted 13 patent applications.

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

ADVANCED ELECTRONICS

- The global value of printed, flexible and organic electronics market amounted 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



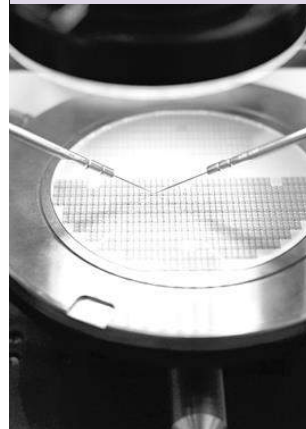
\$1.45 billion
CAGR 2019-2026 16.3%

DISPLAYS



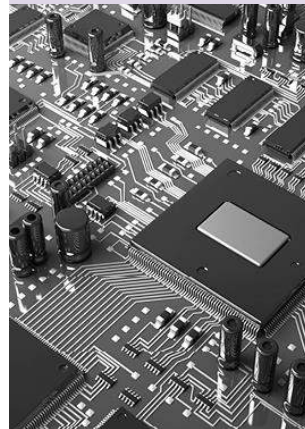
\$28.7 billion
CAGR 2019-2023 12.6%

SEMICONDUCTORS



\$469 billion
CAGR 2019-2024 4.1%

ADVANCED PCBs



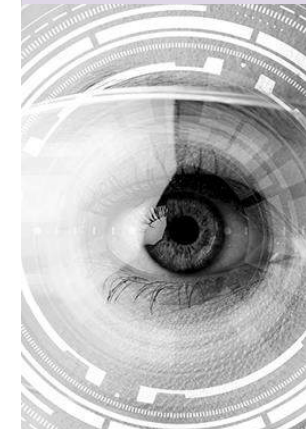
\$55.4 billion
CAGR 2019-2024 4.49%

SECURITY PRINTING



\$51.8 billion
CAGR 2019-2024 12.5%

BIOSENSORS



\$3.9 billion
CAGR 2019-2029 0.98%

PHOTOVOLTAIC CELLS



\$19.4 billion
CAGR 2019-2023 19.4%

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



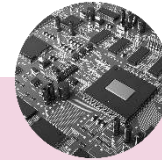
DISPLAYS

- 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

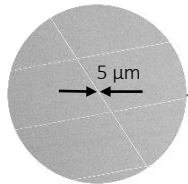
MARKET

FIRST TARGETED MARKETS



SMART GLASS

XTPL technology used for creating invisible conductive structures for glass conversion



Application: **smart glass**

Size of the market: 2019 – \$ 1.45 billion

Market entry strategy:

Market readiness: advanced PoC

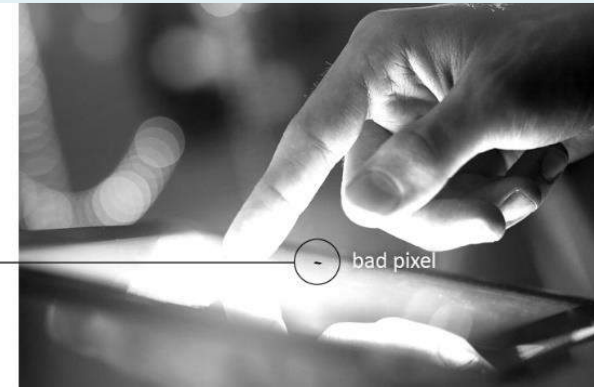
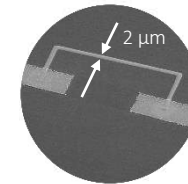
Market partner: yes (United States)

Competition:

- DNP
- Goss International
- Gunze
- Komori

DISPLAYS

XTPL technology used for repairing open defects occurring during display production



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

Size of the repair market: 2019 – \$ 270.4 million

Market entry strategy:

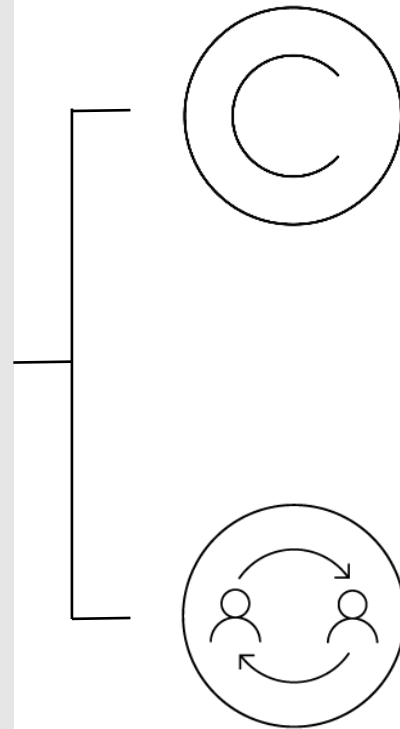
Market readiness : integration with partners' technological processes

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

Competition:

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

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.

Active projects with large international corporations

7

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Verified sales prospects in several application fields

CLIENT A

Manufacturer of devices for display production

First stage assumed the sale of a comprehensive solution (longer time to market); we are currently waiting for the decision regarding the licensing model

Displays – open defect repair

CLIENT B

Manufacturer of devices for display production

Technology licensing

Displays – open defect repair

CLIENT C

Manufacturer of devices for display production

Technology licensing

Displays – open defect repair

CLIENT D

Manufacturer of devices for display production

Technology licensing

Displays – open defect repair

CLIENT E

Displays manufacturer

The decision will be made after finalizing the PoC phase

New generations of displays - improvement of electrical conductivity

CLIENT F

Lighting equipment manufacturer

The decision will be made after finalizing the PoC phase

Conductive interconnections for semiconductors present in lighting devices

CLIENT G

Smart glass manufacturer

Technology licensing / Strategic partnership

Smart glass



FEBRUARY 2019

- in February 2019, the Issuer launched its subsidiary XTPL Inc. in Sunnyvale, in Silicon Valley, whose board includes: Filip Granek, Harold Hughes and Amir Nayerhabibi
- the Silicon Valley direction is natural for XTPL, mostly due to the concentration in this area of companies that are the leaders of the most interesting sectors for the Company
- it is a market with a unique business infrastructure and vast experience in implementing high technologies
- the opening of the Company in the Valley increases the credibility of XTPL in the eyes of potential US contractors

FEBRUARY 2019

- February 20, 2019 is the date of the first trading session of XTPL on the WSE main market
- several months earlier XTPL debuted on the New Connect market
- XTPL has decided to transfer the listing of shares to the main market of the Warsaw Stock Exchange to attract the interest of new institutional investors, both international and domestic, investing in global breakthrough innovations



APRIL 2019

- XTPL on the podium of the China Innovation & Entrepreneurship competition in the advanced manufacturing category
- the competition attracted high-quality projects and companies from around the world
- the main goal of the event is the development of the hi-tech industry on the Chinese market
- the first stage of the competition took place in Berlin, where companies from the region competed for the place in the final
- the final took place in Shenzhen, where over 100 outstanding projects fought for the podium place





MAY 2019

- during the Display Week - 14-16 May in San Jose - XTPL presented its additive technology for the display sector
- the company presented itself to over 7,000 key professionals operating in the displays market: decision makers, engineers, suppliers, as well as end-users and even technology investors
- XTPL conducted dozens of advanced business talks and made new contacts with the largest players in the industry
- XTPL is open to cooperation with manufacturers of display production devices, and with display manufacturers themselves, to provide them with a highly effective solution for industrial implementation

MAY 2019

- Hiroshi Menjo on the board of directors of XTPL Inc.
- co-founder and managing partner at NSV Wolf Capital, the strategic fund in Silicon Valley
- career at Konica, research at Massachusetts Institute of Technology and MIT Microelectronics Labs
- active in the Boston Consulting Group in Tokyo
- experience in The McKenna Group, a leading consulting company in the high technology industry
- expert in implementing Japanese entry strategies and strategic alliances with Japanese companies



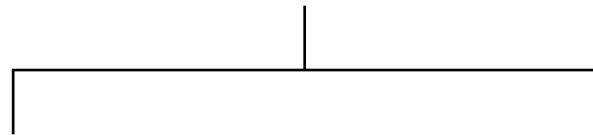
JULY 2019

- 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



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

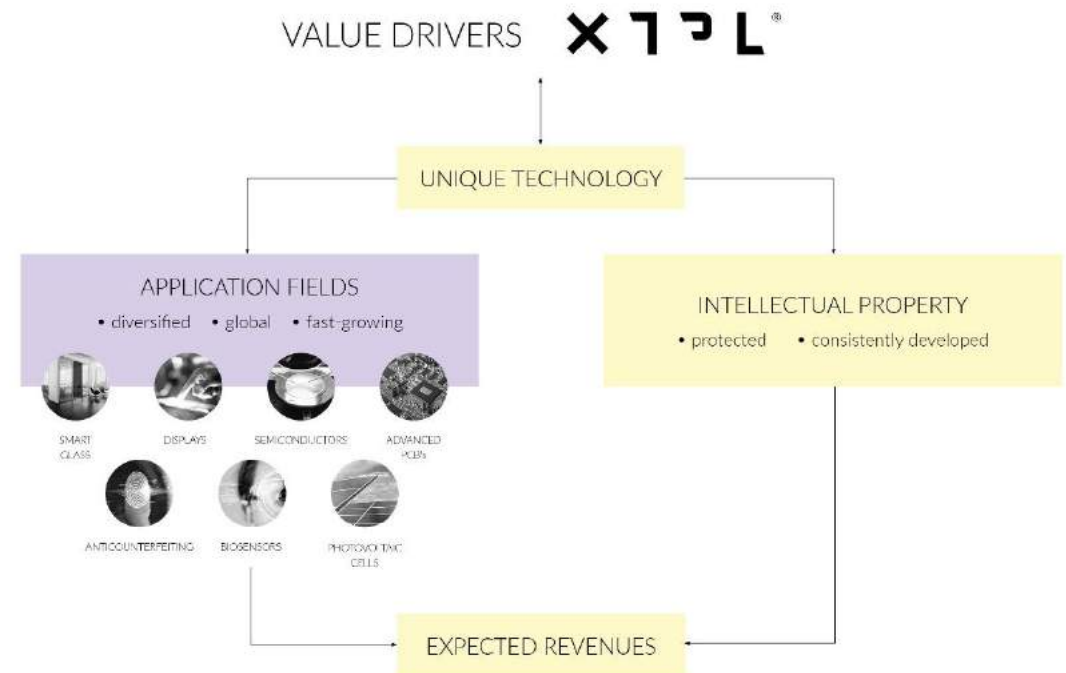
regular payments, linked to the volume of sales of devices or products based on the licensed technology; they are usually charged within 12–18 months after the date of the license agreement (the time needed for the licensee to implement the technology in its product development process)

AUGUST 2019

- 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)

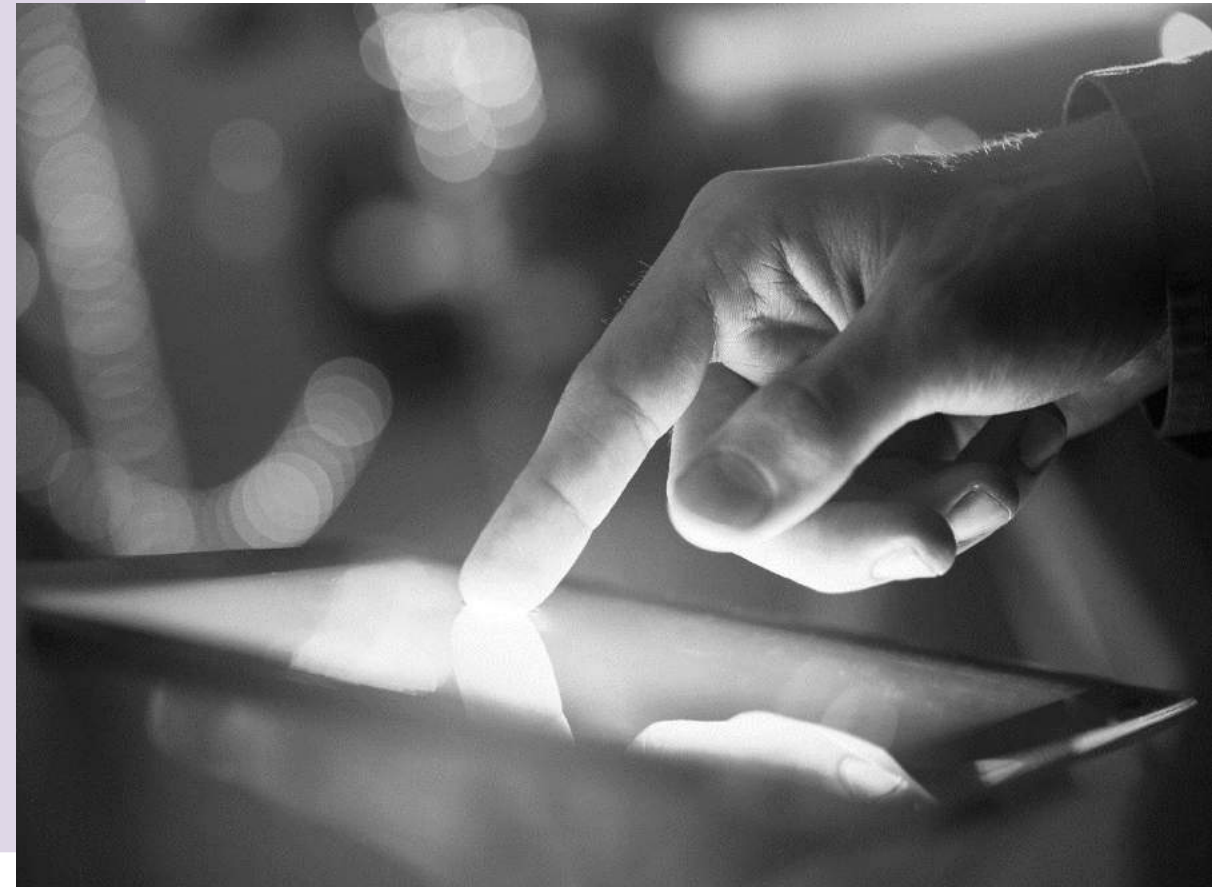
SEPTEMBER 2019

- at present, XTPL has 13 international 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



NOVEMBER 2019

- 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

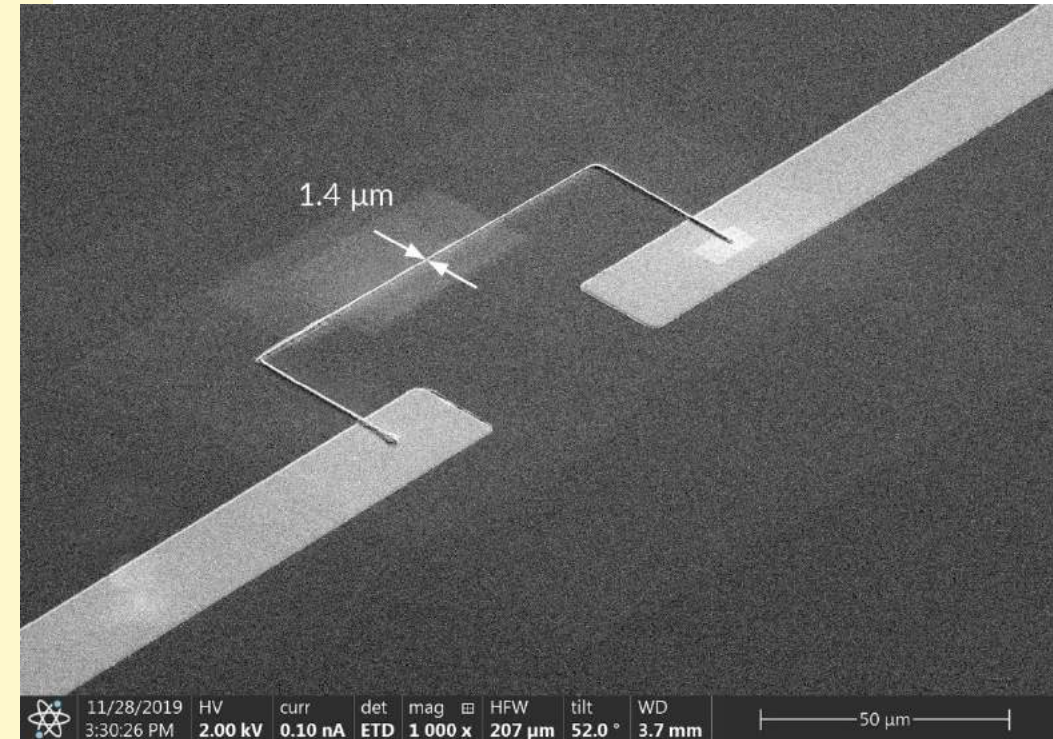




NOVEMBER 2019

- 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)
- representatives of the Korean partner took a reference visit in November at XTPL's headquarters in Wrocław
- The MoU marks the beginning of so called "design in" stage. The objective of this stage is to adapt the technology to the specific requirements of the partner's production process. It also starts the process of negotiations of the business terms of a future contract
- if successful, the commercialization of the innovative XTPL technology in the area of open defect repair will usher the company into perspective display sector

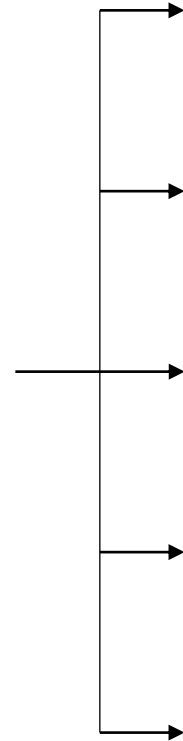
- there is a clear market need for a new open defect repair technology, mainly related to the implementation of next generation displays
- rejects on display production lines can reach up to 50% (if defects occur), especially where a new generation of displays enters production
- in the case of displays, the cost of a semi-finished product is 50–70% of the cost of the final product, so manufacturers cannot afford to give up repairing defects
- to be able to implement this process efficiently, taking into account the progressing miniaturization and a simultaneous increase in the resolution of next-generation displays, manufacturers expect this repair method to offer a significantly higher precision. XTPL is on the technology maps of the sector leaders and establishes strong ties with their suppliers
- the Company is very active in this area (with actions at various levels of advancement):
 - MoU signed in November 2019 with HPK – one of the main suppliers of open defect repair solutions for the LG Display group
 - TEA signed in February 2020 with Cowin – supplier for leading FPD sector players, such as BOE, CSOT or Tianma





- XTPL is currently implementing the third phase of an advanced proof of concept project
- the main purpose of the current testing phase is to check new formulations of XTPL inks, specifically designed to suit the partner's needs, resistant to, e.g. high temperatures occurring both in the partner's manufacturing process and during operation of the final product
- tests carried out in the Company's laboratories confirmed heat resistance of the structures printed using the new ink
- the dedicated ink formulation is protected by a patent application filed by the Company
- structures have been printed on special substrates supplied by the partner and sent to its manufacturing plant, where they will undergo advanced post-processing, unique to the partner's technological process.
- ultimately, the implementation of the XTPL solution is expected to significantly improve the functional characteristics of the partner's products and help him enter new market segments
- the success of this project is in the interest of both the Company and the potential client

2019



The first two patent applications relate to the ultra-precise deposition process (UPD)

The third patent application concerns the ink used in the UPD process

The fourth application claims the method of precise positioning of the printing head and controlling the distance between the printing head and the substrate

The fifth patent application submitted in 2019 concerns the unique ultra-precise deposition method (UPD)

The other two patent applications concern a new type of inks used in the ultra-precise deposition process (UPD)

K&L GATES
Palo Alto, CA, USA

JANUARY 2020

- on 9 January 2020, XTPL shareholders appointed Prof. Herbert Wirth, the former CEO of KGHM Polska Miedź S.A., to the company's Supervisory Board
- Mr. Wirth has significant experience in business development on global markets and unique competences as well as network of contacts which will strategically strengthen the company's business activities, especially in the Chinese market





FEBRUARY 2020

- on 28 February, XTPL S.A. and Suzhou Cowin Laser Technology Co Ltd based in China signed a Technology Evaluation Agreement (TEA)
- Cowin is looking for a technology for repairing open defects in new generation displays
- The aim of the proof of concept stage realized by both entities is to confirm the parameters of XTPL technology and to assess the possibility of implementing it in the Chinese partner's production processes
- Cowin is a supplier for leading players in FPD sector, such as BOE (leader of the global display market, which is working on an independent proof of concept project with XTPL); CSOT (display manufacturer based in China, producing LCD panels and developing OLED technology) and Tianma (global display manufacturer operating for over three decades, producing modern LCD displays and new display lines using the AM-OLED technology)

MARCH 2020

- XTPL carried out three sales transactions of nanoink based on silver nanoparticles
- nanoink is one of the key elements of the XTPL technology, protected by international patent applications
- two deliveries were carried out for the partners operating in the display sector, the first application field commercialized by XTPL, while the third order was carried out for one of the major players from the EMEA region operating in the display industry and several other advanced electronics sectors
- the sale of the nanoink confirms the significant potential of XTPL's technology





2020

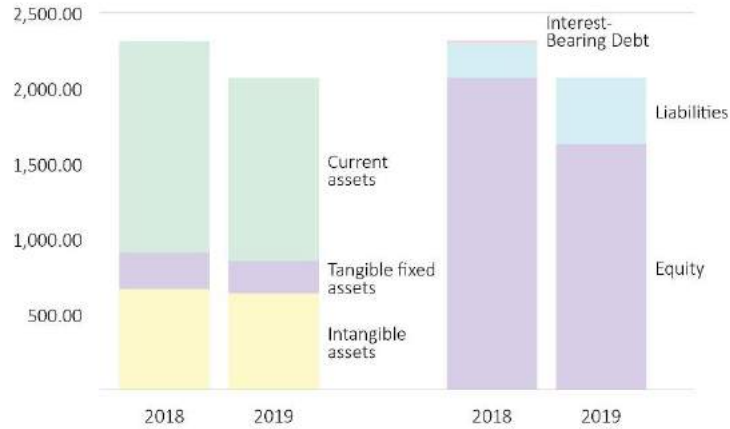


The first two patent applications submitted in 2020 are related to the method and apparatus for characterising and optimising ink flow in the printing head. This method is generic and can be applied not only to the XTPL technology, but also to other printing techniques. Therefore, both patent applications are commercially valuable on its own merits

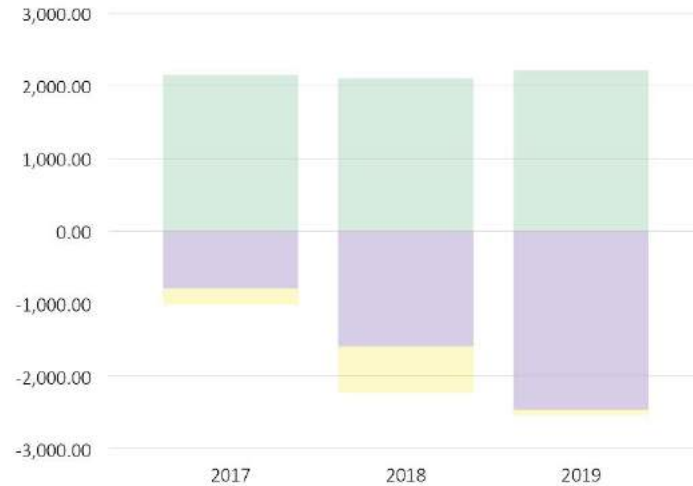
The third patent application is a crucial invention from the point of view of applying XTPL technology in the smart glass sector. It presents how to significantly improve the parameters of transparent conductors

K&L GATES
Palo Alto, CA, USA

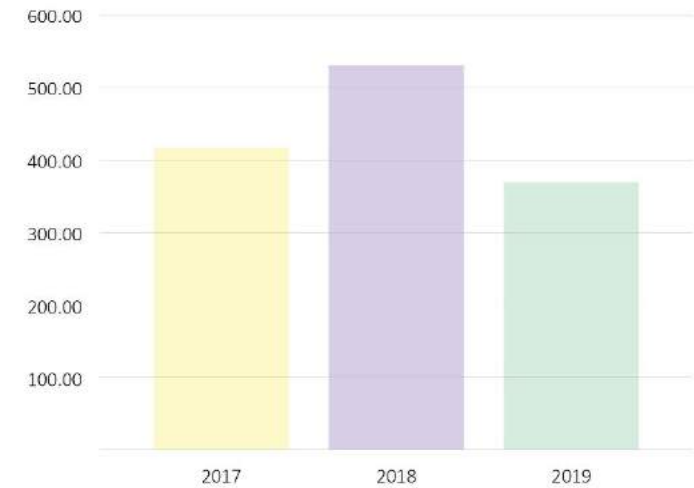
BALANCE SHEET STRUCTURE



CASH FLOWS



NET REVENUE FROM SALES



- Net cash flows from investing activities
- Net cash flows from operating activities
- Net cash flows from financing activities

* figures in EUR thousand

	01.01.2019 - 31.12.2019	
	WITHOUT ESOP	WITH ESOP
Revenue from sales	2 063	2 063
Research and development expenses	5 048	7 316
Gross profit (loss)	-2 985	-5 253
General and administrative expenses	8 076	18 834
Other operating income and operating costs	-5	-5
Operating profit (loss)	-11 066	-24 092
Other financial revenues and expenses	-34	-34
Profit (loss) before tax	-11 100	-24 126
Tax	73	73
Profit (loss) attributable to shareholders of the parent	-10 771	-23 797
Profit (loss) of non-controlling interests	-401	-401
FX differences arising on conversion of foreign affiliates	10	10
Total comprehensive income	-11 162	-24 188



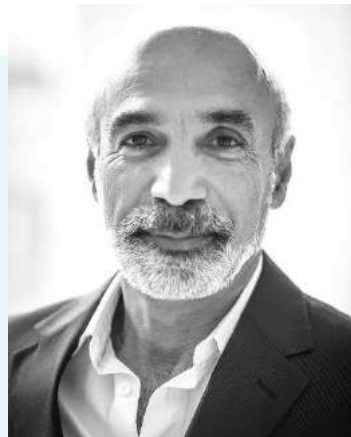
WIESŁAW ROŻUCKI
CHAIRMAN OF THE SUPERVISORY BOARD
Co-founder and former president of the Warsaw Stock Exchange in Warsaw



HERBERT WIRTH
SUPERVISORY BOARD MEMBER
Former President of the Management Board of KGHM S.A. He has vast experience in the area of materials' technologies, international trade and global business administration



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 30 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

8 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



Filip Granek

MANAGEMENT BOARD
PRESIDENT/ CEO



Filip Auksztol

BUSINESS
DEVELOPMENT



Aneta
Wiatrowska

TECHNOLOGY



Krzysztof
Berezowski

PROJECT MANAGEMENT
/PRODUCT DEVELOPMENT



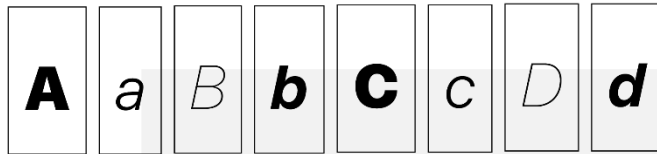
Dariusz
Świderek

LICENSING / IP
MANAGEMENT



Piotr
Kowalczewski

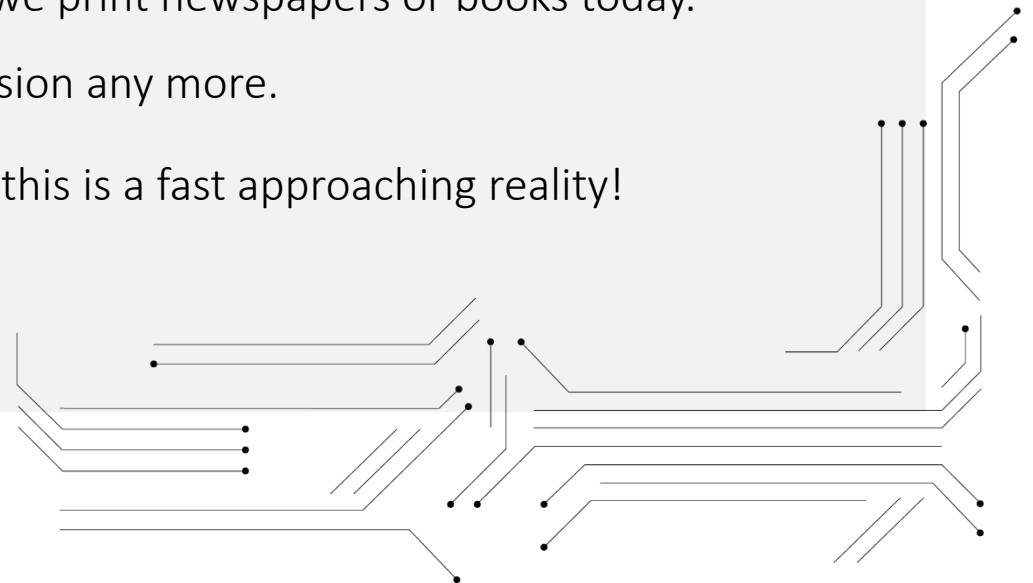
PATENTS

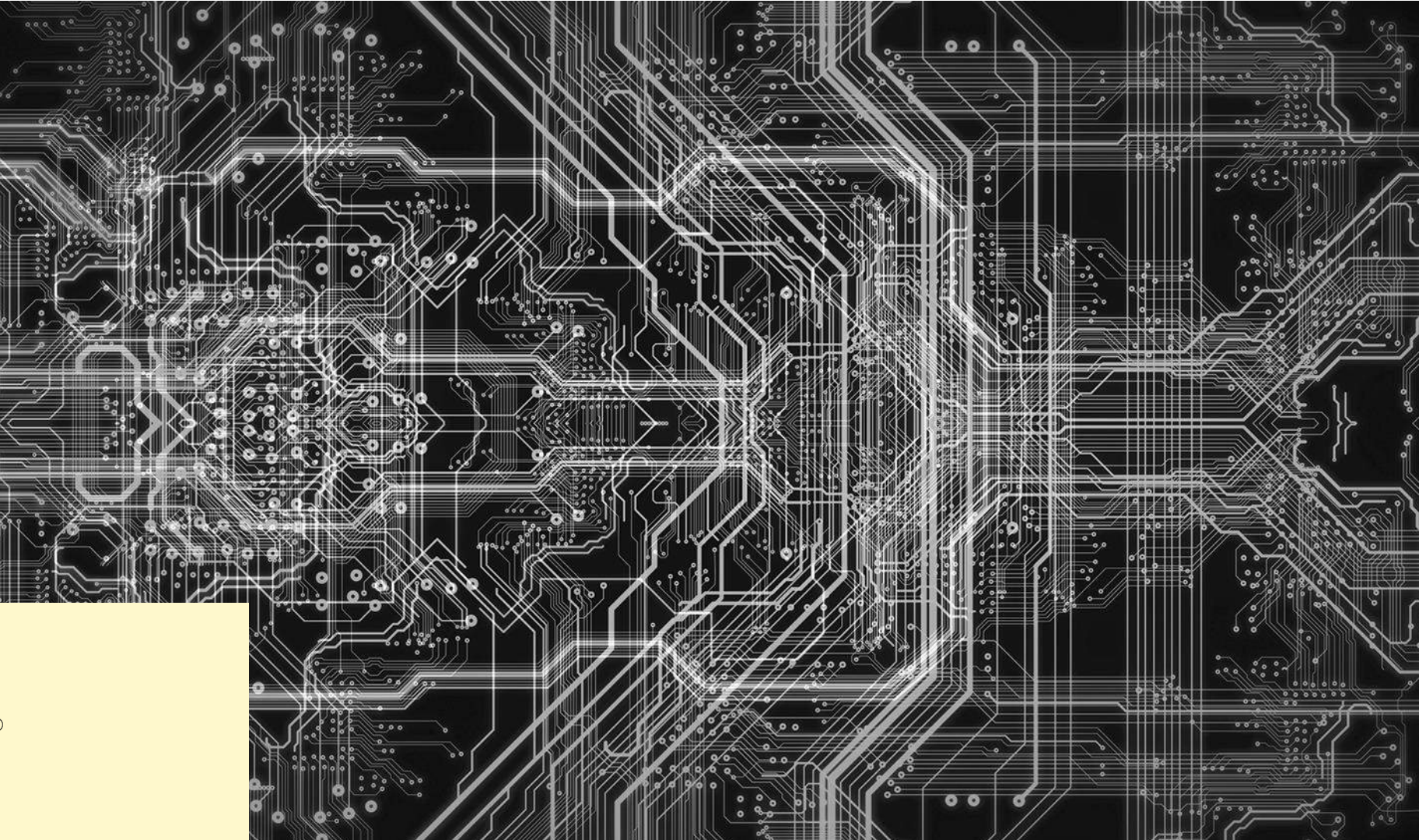


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