



MANAGEMENT BOARD'S REPORT ON THE  
ACTIVITIES OF XTPL S.A. AND XTPL GROUP  
**FOR THE FIRST HALF OF 2022**

Wrocław, 21 September 2022

## LETTER FROM THE MANAGEMENT BOARD

Ladies and Gentlemen, Shareholders and Investors,

We are pleased to present our report summarizing the first half of 2022 at XTPL S.A. This year marks a turning point for us in terms of sales of our products – we are no longer a company focusing solely on research and development, but we have transformed into a business that actively commercializes its solutions based on proprietary technology.

The XTPL operating model is underpinned by three complementary business lines that generate independent revenue streams. These are printing modules intended for industrial implementation on the production lines of global manufacturers of electronics, the Delta Printing System prototyping devices, and conductive nanoinks. All those technological solutions are based on the Company-developed technology of ultra-precise deposition (UPD) of conductive features. Cooperation with partners as part of industrial implementation projects plays an increasingly important role in our activities and is strategically the most important business line for us. In the first half of 2022, we conducted nine advanced projects in this area, receiving valuable feedback on our technology and its possible application in the industrial production of next-generation electronics. Our partners include the Israeli company Nano Dimension, which has been cooperating with us since the beginning of the year – during that time, we completed the second stage of the technological phase of the project, which triggered the second payment tranche. Already after the balance sheet date, we began execution of the order for delivery of an industrial integration printing module for our partner from Taiwan, who will join forces with us to build a prototype of an industrial device for applications in the semiconductor industry.

We also note sales growth in our two other business lines – Delta Printing System devices and nanoinks. It is worth mentioning here, for example, our cooperation with the University of Brescia team on the application of our solutions in the biosensor industry – the research unit purchased our DPS at the end of last year, as well as the agreement with the US company nScript, signed in Q2 2022, for the distribution of our Ag Nanopaste CL85.

The effective commercialization is reflected in XTPL's sales. In the first half of 2022, we posted revenue of PLN 2,970 thousand from the sale of products and services, which is a 21-fold increase on the year-ago period. In Q2 2022 alone, our sales were PLN 2,040 thousand, up 26 times compared to last year. In the first 6 months of 2022, XTPL's total revenues, including grants received, were PLN 4,786 thousand, growing 6-fold year-on-year (by PLN 4,038 thousand). The Company's EBITDA in H1 2022 was PLN -2,244 thousand compared to PLN -4,315 thousand a year earlier. At the same time, the commercialization development has a noticeable, pronounced and positive impact on our operating cash flows, which after 6 months of 2022 were positive at PLN 117 thousand vs PLN -2,053 thousand in the same period last year. We are happy that this is the first 6-month period in which we have managed to achieve such a strong set of results, and we work on continuous progress of our financial performance. As at 30 June 2022, the Company's cash position remained stable at PLN 3,465 million compared to PLN 3,705 million as at 31 March 2022.

The positive reception of our technology by the market, as demonstrated by the commercialization success, gives us reasons to be satisfied and motivates us to continue our intensive efforts. We are gradually expanding our existing business partnerships and forging new, highly promising ones. We continue to actively participate in international industry and scientific events, showcasing our achievements to date and establishing new contacts that may result in new relationships and contracts. Here we should mention that the XTPL technology was presented in the prestigious international scientific magazine Nature Scientific Reports, which also makes us very proud. We gather and analyze feedback on an ongoing basis. In this way, we can constantly improve our solutions to give the best response to the global megatrends with the growing use of electronics, its progressive miniaturization and increasing cost-effectiveness of production while maintaining the highest technical parameters.

The commercialization achievements to date and talks with many global players allow us to look to the future with confidence and optimism. We firmly believe that also in the second half of this year we will be able to share with you positive information regarding the development of the XTPL business.

As we invite you to read the full H1 2022 report, we would like to thank you for your continuing trust. Together with the entire Team, we make every effort to meet the expectations that we all have for the further rapid growth of XTPL.

Kind regards,

FG  
(signature)

JO  
(signature)

## 1. INFORMATION ABOUT THE REPORT AND A GLOSSARY OF TERMS AND ABBREVIATIONS

XTPL Spółka Akcyjna, a joint stock company having its registered office at ul. Stabłowicka 147, 54-066 Wrocław, entered in the business register of the National Court Register kept by the District Court for Wrocław-Fabryczna, VI Commercial Division of the National Court Register under KRS No. 0000619674 ("**XTPL**", "**XTPL S.A.**", "**Company**", "**Entity**", "**Parent Company**", "**Issuer**"), NIP: 9512394886, REGON: 361898062.

As at 30 June 2022 ("**Balance Sheet Date**"), the share capital of XTPL S.A. amounted to PLN 202,922.20 and consisted of 2,029,222 shares with a nominal value of PLN 0.10 each.

This document ("**Report**") contains the Report of the Management Board of XTPL S.A. on the activities of XTPL Group ("**Group**", "**XTPL Group**") and on the activities of XTPL S.A. for the first half of 2022 ("**Management Report**"). The standalone and consolidated financial statements of XTPL S.A. and the Group are contained in separate documents.

The Group includes the parent company and subsidiaries: XTPL Inc. with its registered office in the USA, and TPL Sp. z o.o. with its registered office in Wrocław, fully controlled by XTPL S.A. ("**Subsidiaries**", "**Subsidiary Undertakings**", "**XTPL Inc.**", "**TPL sp. z o.o.**").

Unless indicated otherwise, the source of data in the Report is XTPL S.A. The Report publication date ("**Report Date**") is 21 September 2022. As at the Report Date, the share capital of XTPL S.A. amounts to PLN 202,922.20 and consists of 2,029,222 shares with a nominal value of PLN 0.10 each ("**Shares**").

The consolidated financial statements mean the consolidated financial statements (including the Company and the Subsidiary) for the period from 1 January to 30 June 2022 prepared in accordance with the International Financial Reporting Standards approved for application in the EU ("**IAS/IFRS**"). The standalone financial statements contained in the Report mean the Parent Company's financial statements for the period from 1 January to 30 June 2022 ("**Reporting Period**"), prepared in accordance with IAS/IFRS.

Due to the fact that the activities of XTPL S.A. have a dominant impact on the Group's operations, the information presented in the Management Report relates to both to XTPL S.A. and XTPL Group, unless indicated otherwise.

"**Articles of Association**" – the articles of association of XTPL S.A. available to the public at <https://ir.xtpl.com/pl/materialy/korporacyjne/>.

**Unless stated otherwise, the financial data are presented in thousands.**

### **DEFINITIONS:**

**µm** means micrometer, i.e. one millionth of a meter (1/1,000,000 m)

**nm** means nanometer, i.e. one billionth of a meter (1/1,000,000,000 m)

**Adhesion** means the tendency of different materials to stick together

**Particle agglomeration** means joining fine particles into larger parts

**AMOLED** (active-matrix organic light-emitting diode) means OLED diode with an active matrix

**CAGR** means Compound Annual Growth Rate – the average rate of annual growth over the period under analysis, assuming that annual increases are added to the base value of the next period

**Deposition** means depositing a material locally

**Ink formulation** means precise formulation of the ink, giving it the desired physicochemical properties

**FHE** (Flexible Hybrid Electronics) means an electronic circuit made on a flexible substrate containing rigid electronic components, i.e. components not susceptible to bending

**FPD** (Flat-Panel Display) means a flat display

**IP** (Intellectual Property) means intellectual and industrial property

**Conductance** means electrical conductivity, which is the inverse of resistance

**Hydrophilic material** means a material whose tendency is to attract water molecules

**Hydrophobic material** means a material whose tendency is to repel water molecules

**Additive method** means adding material to obtain a specific structure; it is the opposite of the subtractive method whereby material is subtracted to obtain a specific structure

**micro-LED** means a display manufacturing technology in which each pixel is a semiconductor light emitting diode (LED)

**NDA** (Non-Disclosure Agreement) means a confidentiality agreement

**ODR** (Open Defect Repair) means repairing defects in the form of broken conductive paths in the electronic system

**OLED** (organic light-emitting diode) means an LED based on organic material

**UPD** (ultra-precise deposition) means a technology of ultra-precise printing of structures developed by the Company

**Sintering process** means mutual binding of particles after heating them to a temperature lower than the temperature needed to melt them

**Proof of concept** means one of the first phases of cooperation involving the implementation of a client's idea to prove that it is fit for purpose

**R&D** means Research and Development

**Resistance** means electrical resistance

**SEM** means scanning electron microscope

**TEA** means a Technology Evaluation Agreement

## TABLE OF CONTENTS

1.	INFORMATION ABOUT THE REPORT AND A GLOSSARY OF TERMS AND ABBREVIATIONS	4
2.	Financial highlights	9
3.	Information about XTPL S.A. and its Group	13
4.	Finance	34
5.	Other information	37
6.	Shareholding structure	48
7.	Other	51

# Financial highlights and the rules for preparing financial statements

## 2. Financial highlights

### 2.1. Introduction

The selected financial data presented below contain basic figures (in thousands of zlotys and converted into euro) summarizing the financial position of the Company and XTPL Group.

#### **Exchange rates applied**

Balance sheet items have been converted at the average euro exchange rate announced by the National Bank of Poland, effective as at the balance sheet date.

The items of the income statement and the statement of cash flows were converted at the average EUR exchange rate being the arithmetic mean of the average EUR exchange rates announced by the National Bank of Poland and effective as at the last day of each completed month.

The table below contains the euro exchange rates used to convert the data in this report.

	2022 – January – June		2021 – January – June/ December 2021	
	EUR	USD	EUR	USD
exchange rates used in the financial statements				
for balance sheet items	4.6806	4.4825	4.5208 / 4.5994	3.8035 / 4.0600
for profit or loss and cash flow items	4.6427	4.2744	4.5472	3.7815

### 2.2. Selected standalone figures

Figures in PLN thousand	1 January – 30 June 2022		1 January – 30 June 2021	
	PLN	EUR	PLN	EUR
Net revenue from the sale of products and services	2,970	640	143	31
Revenue from grants	1,816	391	605	133
Profit (loss) on sales	1,411	304	-939	-207
Profit (loss) before tax	-2,801	-603	-4,722	-1,038
Profit (loss) after tax	-2,801	-603	-4,722	-1,038
Depreciation/amortization	433	93	154	34
Net cash flows from operating activities	74	16	-1,945	-428

Net cash flows from investing activities	-943	-203	-1,886	-415
Net cash flows from financing activities	-286	-62	-4	-1
Figures in PLN thousand	<b>30 June 2022</b>		<b>31 December 2021</b>	
Equity	3,636	777	5,288	1,150
Short-term liabilities	6,167	1,318	5,923	1,288
Long-term liabilities	2,435	520	1,616	351
Cash and cash equivalents	3,329	711	4,473	973
Short-term receivables	853	182	1,845	401
Long-term receivables	422	90	449	98

### 2.3. Selected consolidated figures

Figures in PLN thousand	1 January – 30 June 2022		1 January – 30 June 2021	
	PLN	EUR	PLN	EUR
Net revenue from the sale of products and services	2,970	640	143	31
Revenue from grants	1,816	391	605	133
Profit (loss) on sales	1,411	304	-939	-207
Profit (loss) before tax	-2,704	-582	-4,648	-1,022
Profit (loss) after tax	-2,724	-587	-4,652	-1,023
Depreciation/amortization	433	93	154	34
Net cash flows from operating activities	117	25	-2,053	-451
Net cash flows from investing activities	-957	-206	-1,534	-337
Net cash flows from financing activities	-286	-62	-319	-70
Figures in PLN thousand	<b>30 June 2022</b>		<b>31 December 2021</b>	
Equity	3,414	729	4,983	1,083
Short-term liabilities	6,173	1,319	5,947	1,293
Long-term liabilities	2,435	520	1,616	351

Cash and cash equivalents	3,465	740	4,580	996
Short-term receivables	863	184	1,855	403
Long-term receivables	102	22	33	7

# Management Board's report on XTPL S.A. and XTPL Group activities

### 3. Information about XTPL S.A. and its Group

#### 3.1. Key information about the Issuer

<u>Business name:</u>	XTPL Spółka Akcyjna
<u>Registered Office:</u>	Wrocław
<u>Address:</u>	Stabłowicka 147, 54-066 Wrocław
<u>KRS:</u>	0000619674
<u>NIP:</u>	9512394886
<u>Registry Court:</u>	District Court for Wrocław-Fabryczna, VI Commercial Division of the National Court Register
<u>Share capital:</u>	PLN 202,922.20 paid in full
<u>Phone number:</u>	+48 71 707 22 04
<u>Website:</u>	<a href="http://www.xtpl.com">www.xtpl.com</a>
<u>Email:</u>	<a href="mailto:investors@xtpl.com">investors@xtpl.com</a>

The Parent Company has the status of a public company. Since 20 February 2019, its shares have been listed on the regulated (parallel) market operated by the Warsaw Stock Exchange. For financial reporting, the Group and the Company use IASs/ IFRSs. The Company's financial year is from 1 January to 31 December.

#### 3.2. Issuer's governing bodies

##### **Management Board**

As at the Balance Sheet Date and the Report Date, the Management Board performed its duties in the following composition:

Name
Filip Granek, PhD – CEO
Jacek Olszański – Management Board Member

##### **Supervisory Board**

As at the Balance Sheet Date and as at the Report Date, the Supervisory Board performed its duties in the following composition:

Name
Wiesław Rozłucki, PhD – Supervisory Board Chairman
Bartosz Wojciechowski, PhD – Deputy Chairman of the Supervisory Board
Andrzej Domański – Deputy Chairman of the Supervisory Board
Beata Turlejska – Supervisory Board Member
Piotr Lembas – Supervisory Board Member
Professor Herbert Wirth – Supervisory Board Member.

##### **Audit Committee:**

As at the Balance Sheet Date and the Report Date, the Audit Committee performed its duties in the following composition:

Name
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Piotr Lembas – Chairman of the Audit Committee
Wiesław Rozłucki, PhD – Chairman of the Audit Committee
Andrzej Domański – Audit Committee Member
Beata Turlejska – Supervisory Board Member
Professor Herbert Wirth – Supervisory Board Member.

### 3.3. Group structure

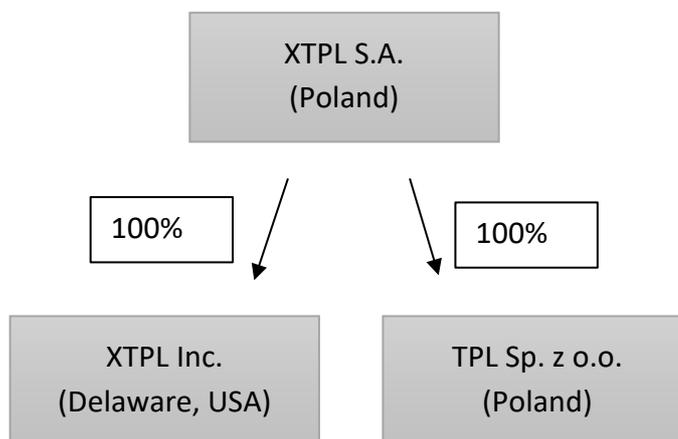
The corporate group XTPL S.A. was established on 31 January 2019.

On 31 January 2019, XTPL S.A. acquired all shares in XTPL Inc., a newly formed entity based in the state of Delaware, United States. The share capital of XTPL Inc. is USD 5,000. XTPL S.A. acquired 100% of the stock at the nominal price. XTPL INC. is consolidated using the line-by-line method.

On 3 November 2020, the Issuer acquired all shares in TPL sp. z o.o. based in Wrocław. The shares in the share capital of TPL were acquired without remuneration, but as a donation from each of the TPL shareholders to the Issuer.

Under an agreement with the Issuer, TPL acts as the administrator of the Issuer's employee incentive scheme, which is an important part of managing and motivating the Issuer's employees and collaborators, contributing to the Issuer's business development and value generation.

Structure of XTPL Group as at the Report Date:



### 3.4. Employment and information about the Issuer's employee team

As at 30 June 2022, the Company and the Group employed 36 people.

### 3.5. Organizational and capital connections

Except for its affiliation with the subsidiary XTPL Inc. and the subsidiary TPL sp. z o.o., XTPL has no other organizational connections.

### **3.6. Description of operations and basic products and services**

XTPL operates in the nanotechnology and microelectronics segment. The Company develops and commercializes its globally innovative platform technology of ultra-precise printing of nanomaterials, protected by an international patent application. The breakthrough nature of the XTPL method is based on the unique combination of features such as additive material deposition, deposition accuracy, inks with high concentration of silver nanoparticles, and no need to use an electric field on the substrate during the printing process. In addition, the method ensures major time and material savings, and uses the traditional advantages of printing such as scalability, cost effectiveness, simplicity and speed. Thanks to dedicated inks, the XTPL method can be used to make prints that have been so far unachievable by means of any other methods. Due to its platform character, the Company's solution will find application in the broadly understood printed electronics industry.

XTPL's strategic goal is commercialization of its platform technology of ultra-precise printing of nanomaterials in the area of advanced electronics.

#### **TECHNOLOGY:**

The Ultra Precise Deposition (UPD) technology, developed and patented by the Company, is a response to the three market megatrends in the production of modern electronics. The industry is currently strongly focused on further miniaturization of the size and weight of electronic devices, modifying their forms and properties, and moving towards an increased flexibility and three-dimensionality. A critical global trend is also environmental protection based on efficient use of limited resources while reducing the production waste, which is enabled by additive technology.

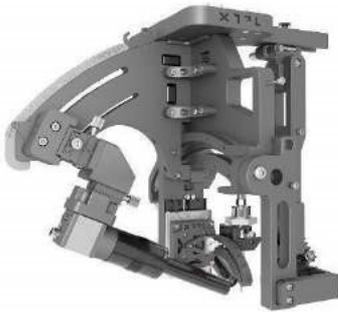
One of the biggest achievements of XTPL is the innovative Ultra Precise Deposition (UPD) technology. The XTPL printing head, equipped with a special nozzle, applies ink to the substrate to create designed structures with a width as small as 1  $\mu\text{m}$ . For comparison, most of the methods of printing electronic materials available on the market with difficulty reach the value of 20  $\mu\text{m}$ , and only single manufacturers declare that they achieve values around 10  $\mu\text{m}$ . The Company's solution can be used on various types of substrates, including flexible or curved ones. The UPD technology can be used to print both simple lines as well as patterns and microdots. Simplicity, unparalleled precision, speed and versatility are the features that make the Company's solution unique.

## **PRODUCTS**

### **EPSILON printing module for industrial integration**

The EPSILON head developed by the Issuer is a printing module that can be integrated with industrial devices. It can be used by industrial integrators and end users to benefit from new possibilities of printing high-resolution functional

features at ultra-high density. This innovative printing head with dedicated nanoinks enables ultra-precise creation of conductive lines on a selected substrate (application field). EPSILON integrates all the functions required by the XTPL<sup>®</sup> UPD technology along with electronic control and the proprietary XTPL<sup>®</sup> UPD Process Control Software package. In terms of commercialization of this business line, the Company is engaged in nine evaluation processes with international, global producers of new generation consumer electronics.



#### **i. Delta Printing System (DPS)**

The Delta Printing System is an independent research and development and prototype system designed to test the capabilities of XTPL's UPD technology on various substrates and with the use of the Issuer's nanoinks. The role of the device is also to promote the Issuer's technology among global opinion leaders from the deep-tech industry – including the best academic and scientific centers as well as R&D institutes of electronics manufacturers.

The Issuer began the commercialization of this business line late in 2020/ early in 2021. As at the Report Date, the Company sold 7 devices:

- to the University of Stuttgart, Germany (Q4 2020);
- to Karlsruhe Institute of Technology "KIT", Germany (Q3 2021);
- to PORT in Poland (Q4 2021);
- to the Glasgow University, UK (Q4 2021);
- to the University of Brescia, Italy (Q4 2021);
- to the Humboldt University of Berlin (Q3 2022);
- to a research and development unit in China (Q3 2022).

The Issuer is gradually delivering the devices to the buyers.



### Highly concentrated nanoinks

Developed by the Company's in-house R&D team, the nanoinks with a unique formulation are one of the elements of XTPL ultra-precise deposition method. They have special physicochemical properties enabling full utilization of the UPD method's potential. In this way, the Company can develop the additive technology comprehensively, with concurrent work on the ink deposition head and constant adaptation of the deposition material. Most of the inks used by XTPL are based on silver nanoparticles.

Other elements are also used, including gold, copper and platinum, as well as quantum dots, for example. Owing to the diversity of materials, XTPL can flexibly respond to the needs of the market and individual clients.

The XTPL method can also accommodate many commercially available materials, which may expand the area of its application in the future, giving customers real technological versatility. With the small size of silver nanoparticles, in the range of 35 to 50 nm, their high stability and high electrical conductivity after the sintering process, the product is attractive for the ongoing development projects in the field of printed electronics.

Thanks to the proven compatibility and highly efficient application of XTPL inks in non-UPD printing method, such as: LIFT (Laser Induced Forward Transfer), Aerosol Jet printing (with pneumatic systems), and high-viscosity ink micro-dispensing techniques, the Company has been able to expand the group of its customers to include users of other commercial technologies. By entering the market of conductive materials and expanding the range of its inks available for other market segments, XTPL has decided to develop its nanoinks proposition as a complementary and stand-alone business line.

### **APPLICATION:**

At present, the Company is focusing on commercialization of its technology in selected application fields.

The first field is displays, where XTPL intends to offer open defect repair (ODR) in the first place. Along with the development of displays, increasing their resolution and functionality, the level of their miniaturization and the density of conductive paths also increases. A side effect of this development is a greater likelihood of critical defects, including broken conductive paths. For manufacturers, this means losses generated already on the production line as a result of the need to reject panels that fails quality tests. XTPL stands the chance to be the first and, for the time being, the only market player to introduce a proprietary solution, which will ensure a significant reduction of production losses without compromising the quality of the repaired displays. Next, the Company plans to provide the display industry with solutions that will help achieve a significant increase in the resolution of a new class of displays, also for new, flexible substrate types.

In the long run, the Company intends to develop its solution for new market segments. The XTPL technology may be implemented in the semiconductor industry also as a sought-after alternative for photolithography or in new types of connecting integrated circuits with PCBs, and, for example, facilitate the fabrication of innovative security printing solutions, functional and effective biosensors and high-performance photovoltaic panels. The technological revolution

in which the Company is to play a vital role is about enabling the manufacture of complex and complicated electronic devices using cheap and scalable printing methods.

### 3.7. Business model, strategy and development outlook

XTPL is a supplier of advanced ultra-precise technology for nanomaterials printing. It develops and commercializes the technology in a way dedicated to a specific application field, and will rely primarily on the selected model:

#### LICENSING

The Company develops a technological solution dedicated to a particular application field, which is licensed to a partner who on its basis builds devices that allow the technology to be used in industry. In this case, the Company generates revenue from license fees related to the sale of devices equipped with the developed technology.

#### STRATEGIC PARTNERSHIP AND DISTRIBUTION AGREEMENTS:

The Company develops a technological solution dedicated to a particular application field; the solution is then commercialized in cooperation with a strategic partner under a joint venture agreement. In this case, commercialization tasks are divided between the partners in accordance with their competencies and potential. The Company participates in profits achieved through the joint venture.

Another possible option is to acquire a distributor for the Company's technology and products in a particular geographical region. In this case, the terms of cooperation and contracts will be determined depending on the market, the distributor's position, and the obligations agreed by the Parties.

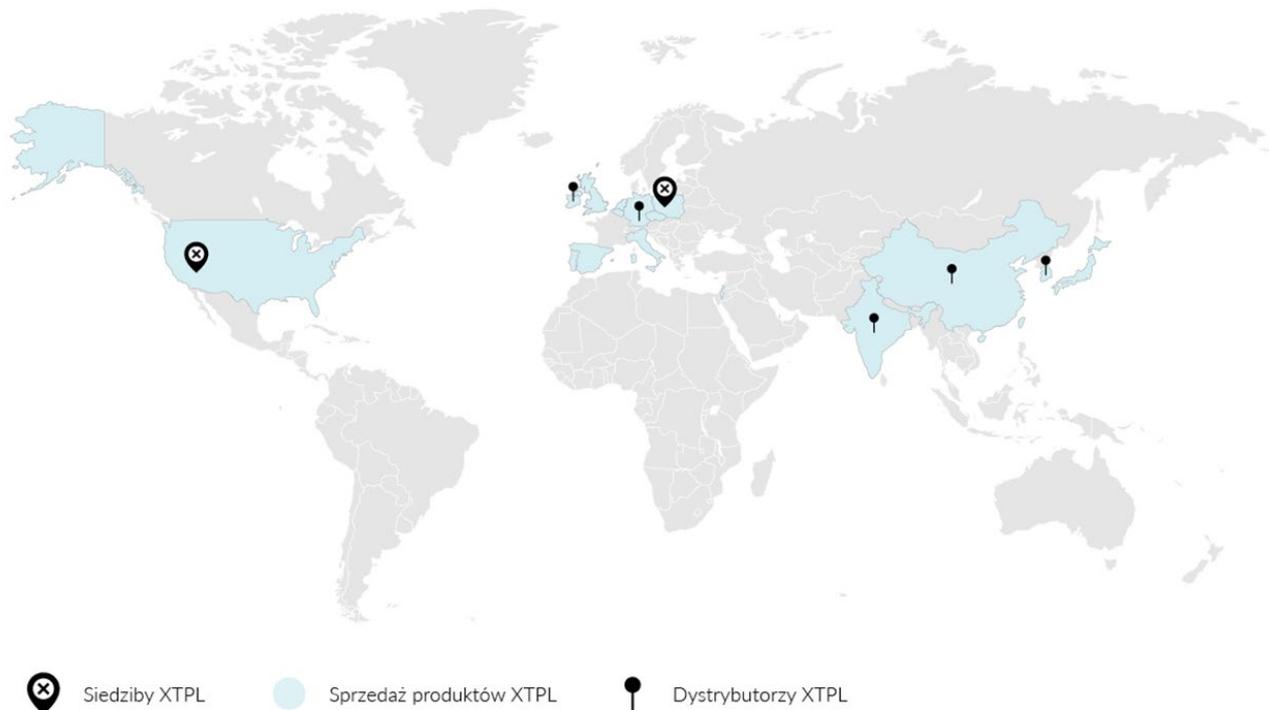
#### SALE OF PRODUCTS

The Company also develops sales of its proprietary products: Conductive nano-inks, based on silver nanoparticles, intended for use in printed electronics, and also adapted to other printing methods such as Ink Jet, Aerosol Jet and LIFT, and laboratory and prototyping devices complete with the necessary consumables. The Delta Printing System can be both a revenue source when sold to research institutes and industrial R&D departments, and an intermediate step towards licensing revenue in deals with business partners. Cooperation in the two areas will be based on a mutual exchange of experiences and knowledge, while the device will be delivered on commercial terms. In addition, each demonstrator sold will generate a stream of revenue from consumables, such as inks, cartridges, capillaries, as well as services, including consulting, research and maintenance (for the machines and software).

The choice of the optimal business model depends on the specific customer in the particular application field. Current talks take into account all of the above-mentioned business models, and the appropriate model is selected during the relationship-building process.

### **International Distributor Network**

Starting from 2021, the Company began building a distribution network that will facilitate the promotion of XTPL technologies and products on the Issuer's most important markets. The need for that model of operation arose in 2020, when the coronavirus outbreak derailed the organization of on-site industry events. The difficulties building direct relations with potential buyers of XTPL technology prompted the Management Board to look for an alternative solution. As a result, during 2021 XTPL quickly attracted first five distribution companies to represent it on Asian and European markets. In Q1 2022, partnership was forged with another two companies. In addition, in 2019, the Issuer also set up a commercial presence in the form of a subsidiary in the United States.



### **MARKET ENVIRONMENT AND OUTLOOK**

With its technology, the Company is targeting the market of electronics, the production of which could potentially be completely replaced by additive printing. The market is growing fast. In 2021, its value exceeded USD 45 billion, with the display market having the highest share in it (USD 40.2 billion, according to IDTechEx). According to the same report, the value of components produced solely by printing methods exceeded the USD 6.5 billion in 2021. Other reports, such as Markets and Markets, suggest that the value of the printed electronics market in 2021 was almost USD 10 billion, and in 2026 it is expected to reach USD 23 billion. According to the authors of the report, the value of that market is driven by the increasing demand for energy-efficient thin and flexible consumer electronics.

XTPL's strategic goal is wide commercialization of its platform technology of ultra-precise printing of materials in the area of advanced electronics. The company seeks to adapt its technology for various application fields, and then offer the technological solution to industrial partners through various mechanisms: licensing, strategic partnerships and joint

ventures. The overarching objective of XTPL's operations is to implement nanoprinting solutions adapted to market needs in selected industry sectors.

#### **Value of the R&D equipment market**

According to the Issuer's estimates based on available market data, the global annual sales of printers for R&D, rapid prototyping and small-lot production in the area of broadly understood printed electronics amount to approx. 250–500 devices per annum. The price of those printers ranges from EUR 50 thousand to more than EUR 500 thousand per device.

#### **Value of the conductive nanoinks market**

According to data published in the Markets and Markets market report, the global market for conductive inks reached USD 3.0 billion in 2020, and is expected to reach USD 3.7 billion in 2025. The market is buoyed by the growing use of electronics in the rapid urbanization processes, miniaturization of electronic components, as well as by the possibility of reducing production costs while maintaining high electrical conductivity and efficient manufacturing in line with environmental protection standards.

#### **DEVELOPMENT DIRECTIONS AND FOCUS AREAS:**

An exceptional feature of the XTPL technology is the possibility of its application in many fields of industry.

Presented below are applications in the areas that are currently key for the Company:

#### **Displays:**

Currently, commercialization is carried out in a subsector of this market, namely the open defect repair. XTPL offers a new breakthrough solution that allows defects in conductive paths to be repaired at low cost, with precision and speed unparalleled to any other existing solution. The technology developed by the Company will help display manufacturers increase production efficiency and reduce costs associated with material losses.

Another area of application of the technology for flat panel displays is the precise printing of electrical connections for LEDs in micro-LED displays. The Company's technology can be used for printing repeatable conductive structures with a diameter of less than 10  $\mu\text{m}$  and a very aspect ratio. These unique properties are much in demand amongst manufacturers of future micro-LED displays.

#### **FHE (flexible hybrid electronic) sector:**

Flexible hybrid electronics is another new market that is in the focus of the Company's attention. Companies such as Boeing, Lockheed Martin, Applied Materials and research centers including Dutch Holst Centre, Belgian IMEC and German Fraunhofer have already confirmed their activities in that field. In the United States, Next Flex was formed, an institution bringing together 90 representatives of the industry and 28 representatives of research universities. This is the largest agency investing in the FHE sector. According to an analysis by Mordor Intelligence, the FHE market in 2019 was valued at USD 95 million, but in already 2025 it may reach USD 235 million. According to IDTechEx, FHE is expected to become so "ubiquitous" in 2030, with a value of even USD 3 billion.

#### **Semiconductors market**

Another market for the Company's technology is the semiconductor market. Its special application areas include making electronic connections on complex 3D topographies and heterogeneous substrates in advanced integrated circuits or microelectromechanical systems (MEMS). According to an analysis carried out by Mordor Intelligence that takes into account the impact of the COVID-19 pandemic, in 2020, the global market for advanced integrated circuits reached USD 24.93 billion, and by 2026 is expected to grow even to USD 38.62 billion. The size of this market shows great possibilities: not only in terms of potential application of the UPD technology in new areas, but also in the research and prototyping of new systems.

In this area, the Company is conducting active talks (at various levels of advancement) with market leaders.

Moving forward, the growth of the electronics market will be strongly driven by the areas where conventional production methods cannot be applied. By marketing its UPD technology embodied by the Delta Printing System, the Company promotes the innovative, proprietary solution that is used by pioneering research and scientific centers in their research and development, while at the same time defining breakthrough standards for the production of future electronic devices.

The new, already identified and pre-verified application areas for the XTPL technology include:

- PCB (printed circuit boards) market
- biosensors market
- photovoltaic cells market.

All the Company's R&D work takes place in Poland. Commercialization will be primarily focused on markets of North America (mainly the United States), Asia (China, Korea, Taiwan, Japan) and EMEA.

### **3.8. Protection of intellectual and industrial property**

The policy of building a patent family plays an crucial role in the processes of commercialization of the technological solutions designed and implemented the Company. Intellectual property is a product and a competitive advantage of XTPL. For this reason, patent cloud development has a major impact on the business value – the size and appropriate protection of the cloud are key to the market position. XTPL solutions are protected from the moment of patent filing with the appropriate office.

The Company distinguishes five patent groups for its technology and products based on that technology:

1. UPD process – patents describing the ultra-precise deposition process or a device used for this process
2. Nanoinks – patents protecting various nanoink formulations
3. Software – patents protecting the solutions implemented in the software that controls the printing devices
4. Application fields – patents describing solutions to specific technological problems using the UPD method
5. Characterization and quality control – patents related to the characterization and quality control of selected components of the printing head

During the Reporting Period, the Company:

1. **Obtained patent protection from the Japanese Patent Office** – on 5 January 2022, the XTPL Management Board reported that the Japanese Patent Office granted the Company patent for its method of forming lines with a width below 1 micrometer using the XTPL-developed ink containing nanoparticles of silver. The patent was granted in response to the patent application “Bottom-up method for forming wire structures upon a substrate” (ESPI Current Report no. 2/2022). The application procedure for this patent was initiated on 22 March 2016. This is also the date when patent protection started. Outside of Japan, the patent application is already protected in the United States, China and Germany. The Issuer is taking steps to obtain protection in other countries, including Israel, Vietnam and Taiwan;
2. **Obtained patent protection from the United States Patent and Trademark Office** – on 11 May 2022, the Company received information about the conditional approval of a patent for the Company by the United States Patent and Trademark Office for its method of forming lines of several hundred nanometers wide using the XTPL-developed silver nanoink, i.e. for the patent application “METHOD FOR REMOVING BOTTLENECKS”. (ESPI Current Report No. 11/2022 of 12 May 2022).

The Company has adapted its process of filing patent application to the recommendations of the patent offices cooperating with it and the advisors from the executive board of XTPL Inc. based in the United States. The recommendations concern, *inter alia*, an appropriate combination of new technological solutions and inventions into a single patent application. This is expected to increase the quality of individual submissions and consequently strengthen protection of the Company's intellectual property.

According to ESPI Current Report No. 45/2020 of 23 November 2020, the Management Board expected that by submitting the applications in the model described above, by the end of 2022 the number of all the Company's applications to date would be 26. As at the date of publication of this report, the Company's Management Board does not see any risk to achieving this target. The Company is gradually increasing its competitive edge by filing further patent applications.

As at the Report Date, the Company had 24 patent applications filed in total. As at the Balance Sheet Date, the Company had 2 patents granted. As at the Report Date, the Company had trademarks registered with the Patent Office of the Republic of Poland and the European Union Intellectual Property Office, as well as in China and the United States.

### 3.9. XTPL's activity and achievements in H1 2022

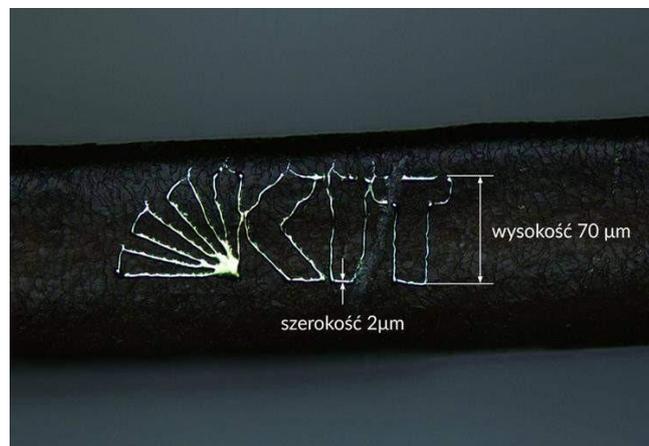
#### 3.9.1. Issuer's progress and achievements in the commercialization of technologies and products

In the first half of 2022, the Company continued activities aimed at closing further sales transactions within all its three business lines.

##### **Delta Printing System:**

During the Reporting Period, the XTPL team responsible for the commercialization of the Delta Printing System held numerous talks and engaged in many interactions with potential clients. As a result, the Company expanded its list of experts from around the world, operating mainly in the microelectronics, microsystems, semiconductors, biosensors, displays and similar industries, who highly value the technology developed by the Company and are potential buyers of XTPL products in the following years.

The unprecedentedly high printing precision, especially when using highly-viscous metallic inks is the main advantage of the Delta Printing System that makes global technological innovators interested in this device. Users of the Delta Printing System appreciate the device also for its ease of use, platform character and the ability of quick start without long prior preparation, and for not having to clean the printing elements once the work is finished. The printed logo of KIT on a human hair is an unusual way of showing the possibilities of the Company's technology and device. Importantly, this kind of printout can be made right after a short user training conducted by the Company's team.



Logo of Karlsruhe Institute of Technology printed on a human hair  
(photo courtesy of Georg Gramlich [IHE], KIT).

The Company's efforts helped stimulate interest in the Delta Printing System among potential buyers from such areas as microelectronics, biosensors, semiconductors, advanced integrated circuits, displays, etc., The information received by the Company's Management Board from interested buyers shows that some university clients have already submitted grant applications that reflect a budget for the purchase of the Delta Printing System.

In the first half of 2022, the Delta Printing System was delivered and to and started up at the University of Brescia. Moreover, as a result of the actions described above, after the balance sheet date, the Company confirmed two more orders from Humboldt University in Berlin and from Yi Xin – the Chinese distributor of the DPS. In the latter case, the end buyer of the device will be a leading Chinese R&D center based in Beijing, which placed its order following the

demonstration and tests of the XTPL technology. The Delta Printing System will be used by the End Client for work on advanced integration of semiconductor components in a new class of More-than-Moore (MtM) devices. MtM is a new area of micro and nanotechnology that goes beyond the boundaries of conventional semiconductor technologies and applications. Revenues from the sale of both DPS devices will be recognized by the end of 2022.

Also after the balance sheet date, the IGM Institute (Institut für Großflächige Mikroelektronik) of the University of Stuttgart decided to use the option to buy the Delta Printing System that it had so far under used a lease agreement signed on 23 November 2020. (Current Report 47/2020 of 23 November 2020). IGM is historically the first external user of DPS, and its decision to buy the device before the end of the lease confirms its high usefulness in the area of printed electronics R&D.

Additionally, during the Reporting Period, cooperation agreements were signed with local distributors in selected European countries: Austria, Italy, Belgium, Luxembourg, Denmark, the Netherlands, France, Spain, Germany, Switzerland (merconics GmbH & Co. KG) and in India (Vertex Global Solutions), which significantly increased the Company's ability to reach new customers potentially interested in the Delta Printing System device. XTPL expects that in the following quarters of 2022 the Company may receive orders originating from those partnerships.

The interest of potential buyers of the Delta Printing System is particularly attracted by the Company's activities aimed at direct relationship-building, participation in trade fairs and conferences, cooperation with local distributors and promotion of the device by its current users, who present and publish the results achieved by means of the Company's technology. The possibility of making microelectronic structures that previously could not be achieved using alternative methods is highly noted both by academic and industrial communities.

#### **Metallic nanoinks:**

The fundamental concepts of nanoinks production elaborated by the Company during the development of conductive materials for the UPD technology have been commanded by representatives of scientific and industrial communities as extremely valuable in terms of production of new types of electronic devices with the use of additive technologies. Those concepts respond to the high requirements of the rapidly growing market for conductive inks, including the need for efficient deposition at a high load of the metallic component. The developed know-how enables the Company to sell its inks to various segments of the printed electronics market, animating further advances along this path of the Company's development.

Growing sales are generated on the back of this business line. The unique properties of XTPL inks have been successfully put to use in the projects of clients who operate in the sectors nanotechnology, OLED displays, and smart devices for medical technologies, using inkjet printing techniques, LIFT (Laser Induced Forward Transfer), and micro-dispensing techniques for high-viscosity inks. In the Reporting Period, the Company finalized 6 ink sale transactions.

The Company's laboratories are working on new formulations of nanoinks. Once finalized, they will be added to the XTPL offer. In the Reporting Period, the Company also held talks with leaders of electronics manufactured by means of the additive method, and is talking to them about the establishment of strategic partnerships in the area of conductive inks.

If the negotiations and ensuing business relations are successful, additional distribution channels will be established for nanoinks, and growing revenues will be achieved from the sale of those products. One of those strategic alliances is a private label agreement with the American company nScript, signed after the end of the Reporting Period. XTPL's Ag

Nanopaste CL85 will be added to nScript's product offer and will be marketed to nScript's production system users from medical device, defense and space sectors.

### **Industrial implementations of the Company's technological solutions**

As regards the Issuer's third, key business line – implementation of the XTPL technology on the production lines of global next generation electronics manufacturers – work was conducted on nine projects from the Company's project pipeline. In addition to the reported pipeline, the Company intends to have up to five projects that will be developed to bring them to a higher level of evaluation.

Furthermore, in the Reporting Period the Company maintained its focus on the tasks related to the commercialization of the UPD technology in industrial applications for new, potential clients.

At the same time, the Company also engaged in talks with industrial entities regarding the use of the UPD technology in other types of advanced devices. This applies to displays made in micro-LED technology and advanced integrated circuits.

As a result, after the Balance Sheet Date, the Company confirmed the acceptance of the order for the delivery of a printing module for industrial integration. The order was received from a Taiwan-based global manufacturer of specialized equipment for the production of semiconductor components. Acceptance of the order means delivery of the XTPL technology to build a prototype of an industrial device for applications in semiconductor production. The XTPL printing module will be an essential element of the industrial device prototype for advanced packaging applications in the semiconductor industry. The Company's printing module will be integrated into the prototype of the device, which is to meet the technological requirements set for the Partner by the End Client. Sales revenue connected with the order will be recognized by the end of 2022.

At this point, it should also be noted that the Company has achieved a significant milestone regarding cooperation in the area of industrial solutions, namely the signing of an agreement with Nano Dimension Ltd. The agreement was signed on 10 January 2022. Nano Dimension is implementing a globally innovative system of PCB production based on ink-jet printing methods. In connection with the Agreement, XTPL will develop, on a commercial basis, a special formulation of conductive ink for the devices manufactured and supplied by Nano Dimension. Nano Dimension Ltd. is a NASDAQ-listed provider of intelligent machines for the fabrication of Additively Manufactured Electronics (AME). After the end of the Reporting Period, the second stage of development as part of the technological phase of the activities specified in the agreement was completed and approved by Nano Dimension Ltd. Under the agreement, completion of the second stage of the technological phase and the Client's approval of the work triggers the payment of the second tranche, and at the same time it marks the Issuer's commencement of the next stage of work under the technological phase defined in the agreement, aimed at developing a nanoink formulation in accordance with the client's requirements.

### **Commercialization activities in the Flat Panel Display sector (ODR)**

The Company continues cooperation with manufacturers of high-resolution OLED displays. Based on talks and market analyses, the Company has also focused on micro-LED displays.

As regards the Issuer's activities in the FPD sector, it should be noted that in H1 2022, the Company received information that the project "Building Active MicroLED displays By Additive Manufacturing" developed by a consortium to which the

Issuer belongs had been recommended for co-financing in the competition HORIZON-CL4-2021-DIGITAL- EMERGING-0131 – Research and Innovations Actions organized by the European Commission under the Horizon Europe Framework Programme. In addition, on June 27, 2022, an appropriate grant agreement was signed in the HORIZON-CL4-2021-DIGITAL-EMERGING-01-31 Research and Innovations Actions competition by all members of the consortium.

### **Commercialization activities in the area of micro-assembly of advanced integrated circuits**

The Company's technological solution consisting in the possibility of printing using material of very high viscosity on 3D surface topographies has attracted attention from manufacturers of advanced integrated circuits. With the UPD technology, it is possible make precise electrical connections in SiP (System-in-Package) systems, which bring together two or more integrated circuits in one housing. Entities with whom talks are being held are global top-tier producers in this area, based in North America, Asia and Europe.

#### **3.9.2. Achieving milestones in development**

The first milestone is related to the Delta Printing System as the demonstrator of the XTPL technology. Since Q1 of 2022, the nano-printing process control software has enabled the import of designs in the CAD format conventionally used in industry. In this way, users of XTPL devices, both from the R&D area and industry, can easily use existing designs, and efficiently create new patterns of even very complex, multi-layer structures.

The Company also completed two stages of the technological phase under the agreement with Nano Dimension Ltd. The Agreement relates to developing a new generation conductive nanoink for industrial applications in the Client's products designed for the production of PCBs. Establishment of the cooperation and performance of the agreement with the industrial partner in the nanoinks business line is also testament to the continued commercialization potential of the XTPL technology, which in the longer perspective may support its implementation on the production lines of global players in the market of modern electronics.

Another milestone relates to the development of the Ultra-Precise Deposition technology itself. In this context, the greatest emphasis was placed on the development of the procedure of sintering the printed structures by means of a laser or flash lamp in low-temperature drying (up to 100°C). The aim here is to achieve the highest possible electrical conductivity under the given conditions that guarantee the safety of other elements of microelectronic systems.

#### **3.9.3. Other events**

##### **Project of a consortium that includes the Issuer recommended for co-financing by the European Commission**

On 21 March 2022, the Company's Management Board advised that it had received information that the project "Building Active MicroLED displays By Additive Manufacturing" developed by a consortium to which the Issuer belongs had been recommended for co-financing in the competition HORIZON-CL4-2021-DIGITAL-EMERGING-01-31 – Research and Innovations Actions organized by the European Commission under the Horizon Europe Framework Programme (ESPI Current Report no. 7/2022).

The consortium also includes:

- ALEDIA (France)
- BARCO NV (Belgium)
- QustomDot BV (Belgium)

- X DISPLAY COMPANY TECHNOLOGY LIMITED (Ireland)
- X-CELEPRINT LIMITED (Ireland)
- and the University of Stuttgart (Germany).

The project is designed to develop an innovative technology for the production of flexible microLED displays using precise additive printing technologies.

- Total Project value: EUR 4,293,263.75;
- The Issuer's participation in the Project: EUR 429,812.50;
- Recommended co-financing for the Issuer: EUR 429,812.50;
- Implementation period: 24 months.

#### **Agreement signed by the Issuer with the University of Brescia relating to strategic cooperation in the field of new generation bioelectronics**

On 22 March 2022, the Issuer signed a strategic cooperation agreement with the Department of Information Engineering (Dipartimento di Ingegneria dell'Informazione) from the University of Brescia in Italy. The purpose of the cooperation is to work together on development of new generation organic and biodegradable biological sensors using the Company-developed electronics printing technology. The Management Board provided relevant information in ESPI Current Report no. 8/2022 of 22 March 2022.

As part of the agreement, the Company will ensure technological and expert support relating to its proprietary technology and the Delta Printing System. On the other hand, the Department will provide XTPL with information on the results of its work and outcomes of microproduction of printed biosensors integrated with 3D, adaptable, and flexible substrates. The information will be based on feedback received from industry partners. In addition, results of the research will be published in publicly available scientific articles and presented at the most important international scientific conferences.

#### **Settlement of the incentive scheme**

On 31 March 2022, the Company's Management Board and the Supervisory Board, in accordance with the resolution of the Extraordinary General Meeting of 24 April 2019, granted the Company's employees and collaborators the right to acquire 22,105 shares and acquire 50,000 subscription warrants, including 5,000 shares for the CEO Filip Granek and 5,000 shares for the Management Board Member Jacek Olszański, and 3,000 subscription warrants for the CEO Filip Granek, and 3,000 subscription warrants for the Management Board Member Jacek Olszański.

The valuation of the financial instruments granted in 2022 is PLN 1,149 thousand, and was reflected in the Issuer's Q1 financial report published on 18 May 2022.

#### **3.10. Significant events occurring after the Balance Sheet Date**

### **Signing an agreement for the purchase of a part of series A convertible bonds of XTPL S.A. for redemption**

On 6 July 2022, the Issuer concluded an agreement with the bondholder to purchase 2,993 series A bonds of the Company convertible into series U shares for the purpose of their redemption. The Issuer communicated this fact in ESPI current report no. 20/2022, referring to ESPI No. 12/2022 of 25 May 2022. In consideration for the purchase of the Bonds, the Issuer was to pay the bondholder PLN 230,122.83, which included the nominal value of the purchased Bonds of PLN 221,482 and interest of PLN 8,640.83. The sale price of the Bonds included all receivables resulting from the purchased Bonds.

After the settlement of the Bond purchase transaction, the Issuer redeemed the Bonds and submitted an application for their deregistration from the securities register kept by the Central Securities Depository of Poland.

After the redemption of the Bonds, the Company has a total of 45,655 series A convertible bonds issued and not redeemed.

### **The Company completes the second stage of the technological phase under the agreement with Nano Dimension Ltd**

On 13 July 2022, with reference to Current Report No. 3/2022 of 10 January 2022 concerning a cooperation agreement signed with Nano Dimension Ltd. and to Current Report No. 10/2022 of 11 April 2022, the Issuer's Management Board reported in ESPI Current Report No. 22/2022 that on 13 July 2022 the first stage of development as part of the technological phase of the activities specified in the agreement was completed and approved by the Client. The Agreement relates to developing a new generation conductive nanoink for industrial applications in the Client's products designed for the production of PCBs.

Under the Agreement, completion of the second stage of the technological phase and the Client's approval of the work triggers the payment of the second tranche. The related revenue will be recognized in Q3 2022 and will significantly influence the financial results for that period. This means that the Issuer has entered the next stage of work under the technological phase defined in the agreement, aimed at creating a dedicated nanoink formulation in line with the client's requirements. The Agreement between the Issuer and Nano Dimension provides for four main stages in the technological phase.

### **Signing agreements for and change of conditions for the issue of series A convertible bonds of XTPL S.A.**

With reference to ESPI Current Report No. 12/2022 of 25 May 2022, on 20 July 2022 the Issuer's Management Board reported (Current Report No. 23/2022) that the Issuer and two bondholders holding all issued and unredeemed Company's series A bonds convertible to series U shares – 45,655 bonds with a total nominal value of PLN 3,378,470, registered in the securities register kept by the Central Securities Depository of Poland (KDPW) under No. ISIN PLO228300011, entered into an agreement on changing the terms of the issue of the Bonds.

Based on the second sentence of Article 7(1) sentence 2 of the Bond Act of 15 January 2015 and under the concluded Agreements, the terms of the Bonds were changed as follows:

- b) redemption date: the redemption date of the Bonds was changed from 30 July 2022 to 30 January 2024;
- c) interest rate: the interest rate on the Bonds (which from the Bond allocation date to 30 July 2022 is fixed and amounts to 2% per annum) is calculated on the nominal value of the Bonds, and as of 31 July 2022 to the redemption date or to the early redemption date will be 5% p.a., calculated on the nominal value of the Bonds. Other terms of the Bonds issue remain unchanged.

The change of the terms of the issue of the Bonds was previously approved by the General Meeting of the Company by Resolution no. 03/06/2022 of the Extraordinary General Meeting of the Company of 21 June 2022 on changing resolution No. 04/06/2020 of the Extraordinary General Meeting of 8 June 2020 on the issue of bonds convertible into series U shares, and a conditional share capital increase by issuing series U shares, depriving shareholders of all their preemptive rights to the convertible bonds and series U shares, and on amending the Articles of Association, which was communicated by the Issuer in ESPI Current Report No. 16/2022 of 21 June 2022.

#### **Acceptance of an order for the delivery of a printing module for industrial integration in the prototype of an industrial device for applications in semiconductor production for a partner from Taiwan.**

On 22 July 2022, in ESPI Current Report No. 24/2022, the Company's Management Board confirmed the acceptance of the order for the delivery of a printing module for industrial integration. The order was received from a Taiwan-based global manufacturer of specialized equipment for the production of semiconductor components. Acceptance of the order means delivery of the XTPL technology to build a prototype of an industrial device for applications in semiconductor production.

The Partner's decision to buy the printing module and start the construction of a prototype industrial device was taken following a complex process consisting of three stages of evaluation of XTPL's technological solutions in cooperation with the Partner in Taiwan (equipment manufacturer) and a Client, also Taiwan-based – a leading global manufacturer of semiconductors. The complex evaluation process with the Partner took about 18 months to complete.

The XTPL printing module will be an essential element of the industrial device prototype for advanced packaging applications in the semiconductor industry. The Company's printing module will be integrated into the prototype of the device, which is to meet the technological requirements set for the Partner by the End Client.

Sales revenue connected with the order will be recognized by the end of 2022.

#### **Sale of the Delta Printing System to the Humboldt University of Berlin.**

On 1 August 2022, the Company confirmed the order placed by the IRIS Adlershof Institute of the Humboldt University in Berlin for the delivery of the Delta Printing System device. The Management Board provided this information on 1 August 2022 in ESPI Current Report No. 26/2022.

The Delta Printing System will be used by scientists of the Hybrid Devices Group for research on electronic and optoelectronic devices (based on hybrid material systems, and organic and hybrid semiconductors) carried out using additive methods.

By developing novel electroactive materials and combining them with adapted structures and new methods of their processing, results of the scientific work can be applied in the area of sensor technology, photovoltaics and optoelectronics. The device is to be delivered by the end of 2022. Humboldt University is one of the largest public research universities in Berlin with over 200 years of history.

Part of it is IRIS Aldershof (Integrative Research Institute for the Sciences), which combines features of a research institute, development laboratory and institute for advanced research, and provides infrastructure for interdisciplinary research in areas like photonics and space-time matter.

### **Sale of the Delta Printing System to China**

On 3 August 2022, the Company confirmed the order placed by Yi Xin HKTechnology Co., Ltd, based in China, for the delivery of the Delta Printing System. The information to this effect was published by the Issuer on 3 August 2022 in ESPI Current Report No. 27/2022.

Yi Xin is an entity that provides the Company with distribution services for XTPL's technological solutions. The Issuer accepted the order placed by the Distributor, which is tantamount to concluding a sales contract. The Company will deliver and commission the device in the second half of 2022.

The end buyer of the device will be a leading Chinese R&D center based in Beijing, which placed its order following the demonstration and tests of the XTPL technology. The Delta Printing System will be used by the End Client for work on advanced integration of semiconductor components in a new class of More-than-Moore (MtM) devices. MtM is a new area of micro and nanotechnology that goes beyond the boundaries of conventional semiconductor technologies and applications.

### **Use of the option to purchase the Delta Printing System prior to termination of the lease by IGM University of Stuttgart**

On 31 August 2022, the IGM Institute (Institut für Großflächige Mikroelektronik) of the University of Stuttgart decided to use the option to buy the Delta Printing System that it had so far under used a lease agreement signed on 23 November 2020 (ESPI Current Report no. 47/2020 of 23 November 2020). IGM is historically the first external user of DPS, and its decision to buy the device before the end of the lease confirms its high usefulness in the area of printed electronics R&D.

#### **3.11. Issuer's participation in industry events**

Industry events are an excellent opportunity to showcase the unique XTPL technology to leading representatives of industry and science from around the globe. XTPL attaches great importance to building and increasing awareness of the XTPL's precision printing technology and the technology's capabilities among experts in the microelectronics,

displays, semiconductors and printed electronics industries. For this reason, during the first six months of 2022, XTPL organized and actively participated in many industry events.

1. On 22 February 2022, the Company participated in **innOLA 2022 (UK, Cambridge)**. The conference has an extensive program, including plenary speeches by world-renowned speakers, two parallel oral presentation sessions, a poster session on the latest research results, and an exhibition with leading companies and organizations. Filip Granek, PhD, CEO of the XTPL, gave a presentation “Ultra-Precise Deposition: an additive manufacturing process for large-area electronics”.
2. Then, on 9 March 2022, the Company participated in the **TechBlick Lounge-Exhibition**, the largest remotely-held event for the community of printed, hybrid, InMold, 3D, R2R and textile electronics. Mr Łukasz Kosior, Business Development Manager at XTPL, gave a presentation “Ultraprecise printed viscous silver inks for semiconductor packaging applications”.
3. On 22 March 2022, XTPL participated in **LOPEC (Germany, Munich)** (Large-area, Organic and Printed Electronics Convention) – devoted to large-area, organic and printed electronics, which is one of the most important international events in the printed electronics industry. During the convention, Filip Granek, PhD, CEO of XTPL, gave a presentation “Ultra-Precise Deposition: A Versatile Tool for Microfabrication”.
4. On 27 April 2022, XTPL took part in the **Smart Systems Integration (France, Grenoble)** conference. During the conference, Mr Łukasz Kosior, Business Development Manager at XTPL, gave a presentation “Novel Approach to Deposit Conductive and Insulating Features at Micrometer Scale for Manufacturing of Smart Systems”.
5. On 8 May 2022, the Company took part in the **Display Week (USA, San Jose)**. This is one of the world’s most important event in the sector of modern displays. XTPL presented its technological solutions during the SID’s Display Week Symposium.
6. During the **ImpactCEE** conference, which is one of the largest economic and technological events in Central and Eastern Europe, Filip Granek, PhD, CEO of XTPL, participated in a discussion panel on the influence of Polish innovators on the European Innovation Area (EIA).
7. The Issuer also took part in the **IEEE 72nd Electronic Components and Technology Conference (USA, San Diego)**, started on 31 May 2022. This was an international event bringing together experts in microelectronic technologies, components and systems to network and exchange experiences.
8. On 30 May– 3 June 2022, the Issuer took part in Euspen’s **22nd International Conference & Exhibition** in Geneva, Switzerland, which is the leading forum for industrialists and scientists for the review of the world's best industrial innovations, avant-garde research and technology development.
9. On 3 June 2022, the Issuer was represented at the “**The Electronic Components and Technology Conference**” (EXTC) in San Diego, California, United States. During the conference, a presentation was presented focusing on the unique capabilities of the XTPL technology in 3D chip printing.
10. XTPL presented its activities during the largest R&D conference and exhibition in Poland – **Innovatorium Łukasiewicz** in Poznań, on 9 June 2022. Filip Granek, PhD, CEO of XTPL, took part in two discussion panels during that conference.

11. On 23 June 2022, Filip Granek, PhD, CEO of XTPL represented the Company during the **Chehmnitzer Seminare (Germany, Chemnitz)** at Fraunhofer ENAS.
12. On 24 June 2022, the Company participated in the virtual **“Innovations Festival on printed, hybrid, 3D, inMold, textile electronics”** organized by TechBlick, during which it presented its technology.
13. On 2–9 July 2022, the Company participated in the **NANOTECHNOLOGY 2022 (Greece, Thessaloniki)** conference, which is the largest conference devoted to technology and networking in Europe, exploring opportunities in the emerging fields of nanotechnology, organic and printed electronics, and nanomedicine.
14. On 10 July 2022, the Issuer also took part in **IEEE FLEPS 2022 (Austria, Vienna)**, a forum for scientists, engineers and practitioners from around the world to present the latest research, ideas and applications in the field of flexible, printed sensors and systems.

At the same time, the Company keeps track of industry events and scientific conferences planned for the coming quarters, in which it could present its technology and products.

### 3.12. Issuer's communication with capital market investors

The Company attaches great importance to communication with capital market participants. In order to implement the corporate governance and communication standards and to ensure constant and equal access to information about the Company for all stakeholders, and to meet their needs, the Company undertakes numerous activities in the area of investor relations. Below is a description of the key events and activities in the first half of 2022 addressed to the capital market.

On 27 April 2022, two earnings calls took place with the participation of the Management Board of XTPL. The first meeting was held in Polish and the second in English. During both videoconferences, the Company's Management Board presented the financial results for 2021 and the key events and achievements in 2021.

Due to the publication of the quarterly report for the first quarter of 2022 (18 May 2022), on 20 May 2022 the Issuer organized an earnings presentation. During that event, members of the Company's Management Board presented the Company's results for the first quarter of 2022, talked about XTPL's two business lines and rapid sales growth.

At the same time, in H1 2022, the Company took part in several important domestic and international conferences with the participation of investors and analysts. Those events are summarized in the table below.

Event	Date	Description
<b>Virtual Institutional Investors Conference Zürs 2022</b>	20-22.04.2022	A conference organized by Raiffeisen Bank International, during which XTPL representatives held a series of meetings with foreign institutional investors.
<b>GPW Innovation Day</b>	28.04.2022	This was the 10th anniversary edition of the highly popular meeting of Polish investors with innovative companies listed on the Warsaw Stock Exchange. During the event, the XTPL Management Board presented the key information about the Company to a wide group of investors.
<b>Equity Forum German Spring Conference, Frankfurt am Main</b>	23-24.05.2022	One of the largest capital market conferences in Germany, which is an opportunity to engage in dialogue on market developments, innovations and future trends. During the conference, the XTPL Management Board held many meetings with investors, analysts and journalists.
<b>Erste's CEE Innovation &amp; Technology Conference</b>	25.05.2022	The conference is dedicated to institutional investors and enables dialogue with innovative capital market companies. During the event, the Company's Management Board members held meetings during which they discussed financial and operational results and presented the outlook for the Company's growth.

Investor conferences taking place after the balance sheet date:

Event	Date	Description
<b>GPW Deep Tech Investor Day</b>	24.08.2022	An event addressed to institutional and individual investors aimed at presenting companies from the Deep Tech industry and educating the audience interested in the industry.
<b>Trigon Tech Conference</b>	15.09.2022	Conference for investors dedicated to technology companies.

The Company is analyzing further investor events during which it will be able to actively present its achievements with respect to technology and commercialization, financial performance and development prospects.

In addition, the Company focuses on regular communication with the capital market, including through a constantly updated website with a separate investor relations section where current information materials are posted (press releases, presentations, newsletters, answers to frequently asked questions from investors), publication of short information from the life of XTPL in social media channels (Facebook, LinkedIn, Twitter), and publication of selected video materials on YouTube. Furthermore, the Company tries to provide fast and reliable answers to the questions received from individual investors. In order to facilitate contact with the Company, the "Contact" tab on the investor relations site contains contact details for individual investors, institutional investors, analysts and journalists.

#### 4. Finance

##### 4.1. Principles for the preparation of the semi-annual condensed standalone financial statements

The standalone financial statements of XTPL S.A. cover the period of six months ended 30 June 2022, and the comparative data for the period of six months ended 30 June 2021, and as at 31 December 2021, and were prepared using the historical cost convention.

The financial statements have been prepared on the assumption that the Company will continue in operation for at least a year from the Balance Sheet Date.

At the date of approval of these financial statements, the Management Board has not identified any circumstances which would point to a risk to continuity of operations in the above period.

The financial statements do not contain all the information and disclosures required of annual financial statements and should be read jointly with the Company's financial statements for the year ended 31 December 2021.

The financial statements have been prepared in accordance with the International Accounting Standard (“IAS”) 34 Interim Financial Reporting and in accordance with the Finance Minister’s Ordinance on current and financial information.

#### 4.2. Principles for the preparation of the semi-annual condensed consolidated financial statements

The consolidated financial statements of XTPL Group cover the period of six months ended 30 June 2022, and the comparative data for the period of six months ended 30 June 2021, and as at 31 December 2021, and were prepared using the historical cost convention.

The financial statements have been prepared on the assumption that the Group will continue in operation for at least a year from the Balance Sheet Date.

The Group has entered the stage of commercialization of its technological solutions. Sales of products and services are growing strongly quarter on quarter. The value of signed and implemented contracts, the relationship and product order base, as well as the advancement of some industrial projects allow the Group to cover its operational requirements. In addition, some operating costs and investment expenses are largely supported with funds from grant projects. Currently, the Group is implementing two projects co-financed by the National Center for Research and Development (NCBR) with a value of PLN 19,370 thousand and one project financed under the Horizon Europe program, with European Commission’s co-financing of EUR 430 thousand. In order to reduce the pressure on cash flows from financing activities, the Parent’s Management Board signed an agreement with bondholders changing the date of redemption of series A bonds convertible to series U shares, with a total nominal value of PLN 3,378 thousand, from 30 July 2022 to 30 January 2024. In view of the above, the Management Board of the Parent Company does not see any risk to the continuation of the Company’s business during the next 12 months.

At the date of approval of these financial statements, the Management Board of the Parent has not identified any circumstances which would point to a risk to continuity of operations in the above period.

The financial statements do not contain all the information and disclosures required of annual financial statements and should be read jointly with the Company’s financial statements for the year ended 31 December 2021.

The financial statements have been prepared in accordance with the International Accounting Standard (“IAS”) 34 Interim Financial Reporting and in accordance with the Finance Minister’s Ordinance on current and financial information.

#### 4.3. Currency of the financial statements

The functional currency and reporting currency of the financial statements is the Polish zloty (PLN), and the data contained in the financial statements are presented in thousands of Polish zlotys.

#### 4.4. Description of significant accounting principles

For the purpose of preparing the quarterly condensed financial statements, the same accounting principles have been used as in the last annual financial statements for 2021 published on 26 April 2022. They have been described in the following sections: 3.6, 3.7 and 3.14 of the Standalone Financial Statements for 2021, and the Consolidated Financial Statements for 2021.

#### 4.5. Factors and events, including extraordinary ones, having a significant impact on the condensed financial statements

In the Reporting Period, in the condensed financial statements the Company recognized the cost the incentive scheme for employees and collaborators based on the Company's shares, in the portion relating to the period ended 31 March 2022. The date of recognition of costs was the moment when the persons covered by the scheme were offered the purchase of the shares. The cost of the scheme (fair value of the shares issued) was estimated at PLN 1,149 thousand and was fully taken to the profit or loss of the current period.

Recognition of the scheme's costs of PLN 1,149 thousand has no impact on the Company's and the Group's assets or financial position, or their ability to service its obligations. The scheme's costs are a non-cash in nature, and reflect the value of shares transferred (net of their purchase price paid by scheme participants). This transaction did not cause any changes in the measurement of assets, the level of equity or the company's ability to generate revenues in the future. The shares transferred also did not cause additional dilution of the existing stock as they had been issued in the first half of 2017 (and were intended for the incentive scheme).

The table below presents the Group's result with and without the effect of the incentive scheme valuation.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME	WITHOUT THE INCENTIVE SCHEME	WITH THE INCENTIVE SCHEME
	PLN`000	PLN`000
<b>Continued operations</b>		
<b>Sales</b>	<b>4,786</b>	<b>4,786</b>
Revenue from the sale of products and services	2,970	2,970
Revenue from grants	1,816	1,816
<b>Cost of sales</b>	<b>3,030</b>	<b>3,375</b>
Research and development expenses	2,799	3,144
Cost of finished goods sold	231	231
<b>Gross profit (loss)</b>	<b>1,756</b>	<b>1,411</b>
General and administrative expenses	3,283	4,087
Other operating income	–	–

Other operating costs	1	1
<b>Operating profit (loss)</b>	<b>-1,528</b>	<b>-2,677</b>
Financial revenues	30	30
Financial expenses	57	57
<b>Profit/ loss before tax</b>	<b>-1,555</b>	<b>-2,704</b>
Income tax	20	20
<b>Net profit (loss) on continued operations</b>	<b>-1,575</b>	<b>-2,724</b>

#### 4.6. Achievement of financial forecasts

Not applicable. The Issuer has not decided to publish financial forecasts.

#### 4.7. Factors which may affect the Issuer's results in subsequent quarters

Factors which may affect the Company's and the Group's operations and results in the following quarters:

- Achieving further milestones in the implementation of the contract with Nano Dimension Ltd.; completion of the development stage under the technological phase of the contract and transition to the commercial phase;
- Completion of the development and testing stage of a device prototype for use in the semiconductor component production area by the Company's partner in Taiwan, to whom the Company provided the printing module as an essential component of the device, and transition to the stage of production and commercialization of the solution;
- Transition to the stage of delivering and testing the prototype in subsequent industrial implementation projects;
- Sale of the Delta Printing System, including acquisition of industrial clients;
- Development of conductive ink sales, increasing the business volume, acquiring new clients, extending the range of products;
- Signing commercial contracts, and progress of work on paid evaluation initiatives, licensing or joint-development agreements in relation to the Issuer's technology;
- Ability to protect and safeguard intellectual and industrial property, including the number and scope of submitted patent applications;
- Favourable trends in the electronics industry;
- Acquiring additional financing in the form of grants and subsidies supporting the Issuer's research and development activities;
- Economic impact of the war in Ukraine;
- Situation in financial markets and development of the coronavirus pandemic.

#### 5. Other information

#### **5.1. Agreements that in the future might affect the proportion of shareholdings**

In April 2019, the shareholders of XTPL S.A. adopted an incentive scheme for key employees and collaborators of the Group. The scheme may potentially bring about changes in the proportions of shares held by shareholders. The resolution introducing the scheme conditionally increased the Company's share capital, excluding preemptive rights of existing shareholders, by no more than PLN 18,262.20 through the issue of no more than 182,622 series R ordinary bearer shares with a nominal value of PLN 0.10 each. The series R Shares may be subscribed for by holders of Series A registered subscription warrants. Under the resolution on the issue of series A subscription warrants with exclusion of preemptive rights, maximum 182,622 warrants, at a price of PLN 165.84, may be taken up. The incentive scheme covers the years 2019–2021. The scheme participants will have the right to exercise the warrants by 23 April 2029. After this date, the warrants will expire. The total number of warrants granted, from all years of the incentive scheme is 100,430 as at the Report Date.

#### **5.2. Changes in the Issuer's Group organization**

Not applicable. In the Reporting Period, no changes took place in the Group organization.

#### **5.3. Branches**

Not applicable. Neither the Parent Company nor its Subsidiaries have any branches.

#### **5.4. Achievement of financial forecasts**

Not applicable. The Issuer has not decided to publish financial forecasts.

#### **5.5. Proceedings before courts and other bodies**

No significant judicial, arbitration or administrative proceedings are pending in relation to liabilities or receivables of the Issuer or the Subsidiaries.

#### **5.6. Non-arms length transactions with related entities**

Not applicable. As part of the Group, no transaction was made with any related party on non-commercial terms.

#### **5.7. Guarantees given**

Not applicable. Neither the Issuer nor its Subsidiaries provided any guarantees in the Reporting Period.

#### **5.8. Explanation of seasonality or business cycles**

Not applicable. The Group's activity is not subject to seasonality or business cycles.

#### **5.9. Acquisition of own shares**

Not applicable. The Parent Company did not buy its own shares in the Reporting Period.

#### 5.10. Financial instruments

Not applicable. Neither the Parent Company nor its Subsidiaries use financial instruments in relation to the price risk, credit risk, risk of material disruption of cash flows or financial liquidity risk.

#### 5.11. Impact of the SARS-CoV-2 pandemic on the Company's and Group's operations

As a result of the COVID-19 pandemic and due to administrative constraints, the Company developed a number of procedures that are triggered depending on the risk level. The Company is well prepared for remote work. The XTPL team members are provided with laptops and company phones with internet access. They can use the GSuite apps to smoothly continue work from home. Teamwork tools are also used to ensure work efficiency. Technological work is continued at the Company's headquarters while maintaining all sanitary requirements announced by state institutions. 95% of the Team members have been vaccinated.

The procedures do not inhibit business development. XTPL conducts proactive sales support activities, also through a network of distributors. All deliveries and installations of devices at clients' sites are carried out in line with the requirements in force in the target country.

#### 5.12. Impact of the war in Ukraine on the Company's and Group's operations

The war in Ukraine did not change XTPL's operating model. The Company has not been affected by any impact of the conflict on the printed electronics market.

The Company's production processes are not characterized by high energy consumption, so increases in the prices of energy carriers will have a very limited impact on the production costs.

The Company does not use any petroleum products in its production processes.

In addition, the Company:

- Is not dependent on any raw material/ component supplies from the regions of Russia, Belarus or Ukraine;
- Does not conduct sales activities in the above markets; Likewise, the Company's business strategy does not envisage sales to those countries going forward;
- Does not have any on-site or remote collaborators from those countries;
- Is an exporter of goods denominated mainly in EUR, so it is not exposed to negative effects of depreciation of the zloty;
- has not received any information from business partners from countries other than those mentioned above about their plans to introduce changes in their business activities that could adversely affect XTPL.
- The Company has identified the risk that the war might impact its operations indirectly by affecting the global economy in terms of:
  - reduced availability of raw materials and the related lower availability of materials and components;
  - supply chain difficulties due to limitations in air transport.

Management of the risk of availability of raw materials and components is described in the *Basic threats and risks* section, point: *Sources of supply*.

The Company and its employees undertook a number of activities to help Ukrainian war refugees:

- Introduced an additional day off per month for volunteering for all employees
- Published job ads on a portal dedicated to Ukrainian refugees
- Collected toys and essential items for children from an Ukrainian orphanage who came to Poland
- Offered accommodation to Ukrainian refugees
- Sewed clothes for children from Ukraine
- Helped in sorting donations at local help centers
- Donated computer equipment to the crisis management center that helps refugees
- Helped in transporting Ukrainian citizens from the railway station to their place of accommodation
- Provided material support to Ukrainian soldiers
- Paid contributions to verified fundraisers.

### 5.13. Risk factors and threats related to the Company's and the Group's business environment

#### Macroeconomic risk

The Company's and the Group's activity depends on the macroeconomic situation in individual markets, primarily in Western Europe, Asia and the United States.

The Company is already present in all those markets. The XTPL technology finds its main application in the field of printed electronics, which is a highly competitive sector. For this reason, the main incentive for the current and potential clients to do business with XTPL is to use this cooperation to achieve significant competitive advantage through the application of the Company's innovative technology in their products. Some of the phenomena that are unfavorable from the point of view of the macroeconomics of a given country/ area (e.g. the growing raw material prices) may constitute an additional positive impulse to use the XTPL technology. However, the pace of economic growth, the level of consumption and investments (especially in the electronics sector), the fiscal and monetary policy, inflation, and especially the level of expenditures on consumer electronics individual countries are the factors that may have an impact on the Company's and the Group's financial results, and thus may also affect implementation of the Company's development strategy.

#### Currency risk

Due to the fact that the Company's and the Group's clients are international entities, most of the Company's revenues related to the commercialization of technology are settled in foreign currencies (mainly the euro and the US dollar). At the same time, as the Company is based in Poland, most of its ongoing expenses will be settled in the Polish zloty. As a result, the Company may be exposed to a significant FX risk. Volatility of exchange rates may primarily cause changes in the value of the Company's revenues and receivables after their conversion into PLN. Despite the significant weakening of the Polish currency related to the outbreak of the war in Ukraine,, the Company and the Group do not see currency risk as a significant threat to the expected level of their operating profitability. The weakening of the Polish zloty strengthens the cash position of the Company as an exporter. A significant portion of purchases of materials and components for the production of printers is settled in euro. As a result, revenues from foreign currency sales constitute

a natural hedge against exchange rate movements. As and when required, the Company and the Group will resort to FX risk management instruments available in the banking market.

### New technology risk

The market in which the Company and the Group operate is characterized by rapid development of technologies. For this reason, the development of the Company's and the Group's operations entails constant tracking and analysis of new market trends and identification of emerging potential competitors and technological solutions they implement. There is a risk that if the current market trends change, the Company and the Group will be forced to look for new applications for its technology outside of what it previously saw at its core business or to incur expenditures to make its existing solutions more competitive. Likewise, the Company and the Group cannot rule out that in the future a new technology will be developed which will make the solutions offered by the Company and the Group unattractive for potential clients. Materialization of this risk will mean additional costs, which will adversely affect profitability of the Company's and the Group's operations. In addition, the need to perform additional work may delay the moment of commercialization of the Company's and the Group's product.

### Competitive risk

The Company and the Group operate in a very attractive market of modern technologies characterized by a steadily growing demand. In this market, there is a number of players whose experience and capital resources are higher than those of the Company. As the market is changing fast, there is a risk of a new entity emerging whose offer will be more innovative than the Company's and the Group's offer. A competitive edge may be obtained by implementing innovative, unique solutions that are attractive for prospective clients in utility and economic terms.

At present, the Company is not aware of any solutions that would technically offer better parameters for the ultra-precise printing of nanomaterials. However, it cannot be ruled out that a new entity or a solution will emerge that will surpass the Company's technology in some or all key parameters. There is also a risk that the Company and the Group will be unable to respond quickly or effectively to the changing market environment, and consequently the solutions offered by the Company and the Group will be considered less competitive. Materialization of this risk may have a negative impact on the sale of the Company's and the Group's products and services and, in consequence, on its trading performance.

### Sources of supply

The Company commercializes and develops its proprietary nanoprinting technology. Due to the advancement of the technology, the Company makes use of a wide range of products and services available in the market, the key ones being measurement, research, conductive nanoinks formulation development and patent protection services as well as services related to rental of specialist equipment and laboratories. The great diversity and variability of the Company's R&D work is reflected in the number of sources of supply it uses.

As a result, in H1 2022, the Company reached a 61% threshold of purchases from one supplier – provider of research services and lessor of laboratories and office space (100%). At the same time, the Company steadily increases its own laboratory equipment and limits the use of outsourced measurement and research services.

In the manufacturing process, the Company sources materials and chemical reagents, which are the key inputs for the production of highly conductive inks offered by XTPL S.A. and uses suppliers of components and materials in the process of making the Delta Printing System devices.

Among chemical suppliers, the highest share of one supplier is 63%, but there are many high-quality materials available on the market and there is no risk of dependence on a single source of supply. The company has established relationships with alternative suppliers, although for logistical reasons it tries to maintain uniform deliveries. Importantly, the vast majority of chemical materials are purchased on the domestic market, so possible problems in the logistics of global supplies are limited.

Among the suppliers of materials and components for the production of printers, the value of deliveries of one of the suppliers reached 25% of the total sum of purchases in this category. The remaining suppliers do not exceed the level of 15%. The company constantly establishes relations with new entities and builds a base of alternative suppliers.

#### Risk related to the technology commercialization process

The Company's and the Group's business model provides for a gradual commercialization of the technology of printing ultra-thin conductive lines for various applications in printed electronics. At present, the commercialization process already covers printing devices and nanoinks. In terms of industrial implementations on clients' production lines, the target business model is that the Company and the Group will commercialize their technological solutions through licensing or will manage the whole value chain, i.e. manufacture, product marketing, distribution and provision of specialized services tailored to the client's needs. The choice of the commercialization model will depend on the results of negotiations with the partner, specific nature of the particular application field and the Issuer's assessment regarding effectiveness of each of the possible commercialization methods in that field.

Currently, the Company is involved in nine industrial implementation projects, which confirms the market need for solutions offered by the XTPL technology. As part of those projects, the Company signed and carries out an agreement with Nano Dimension Ltd. to develop a next generation conductive nanoink for industrial applications in the firm's products designed for the production of PCBs. This agreement is the first agreement signed with an industrial partner and is a milestone in the Company's development. Furthermore, also as part of industrial implementations the Company is delivering a printing module for industrial integration under which a prototype of an industrial device for applications in semiconductor production will be developed in cooperation with a partner from Taiwan.

However, there is a risk that introduction of devices into individual markets will not be in line with the current expectations due to, for example, a lack of or insufficient demand in target countries, misidentification of potential clients' needs, misidentification of legal conditions, incomplete adaptation of the Company's products to the requirements of foreign markets, an ineffective promotional campaign or an unexpected emergence of a competitor. Occurrence of the above events may stifle the Company's and the Group's growth dynamics, adversely impacting their operations and financial position.

#### Risk of failure to achieve revenues

At the present stage of the Company's development, this risk should be considered negligible. In H1 2022, the Company significantly increased its sales revenues compared to the same period last year. The main sources of those revenues were: implementation of an industrial project for the development of a next-generation conductive nanoink; sale of printing devices; implementation of paid stages in some industrial projects, and the sale of nanoinks. The Company is rapidly expanding sales of all product groups. However, it should be taken into account that in its strategy the Company

treats revenues from the industrial use of XTPL technology on the production lines of global players as the main source of revenues, so there is a risk related to failure to achieve the same.

#### Risk of low product quality

The Company's and the Group's business model providing for a gradual introduction of the technology of printing ultra-thin conductive lines for various applications in printed electronics gives rise to a risk of defects, insufficient product quality or unsatisfactory performance of the technology at the initial phase of its commercialization. However, the emergence of unforeseen defects and problems should be taken into account. Such situations may result in a negative first reception of the Company's and the Group's products and, consequently might dampen interest in and demand for the product. As a result, the Company and the Group might not receive revenues in the expected amount.

#### Risk related to the business development model and the failure to deliver the Company's and the Group's strategy

The goal of the business model is commercialization of the Company's ultra-precise technology of printing a wide range of nanomaterials. The Company is already commercializing its first products – technology carriers. It also conducts nine projects related to the implementation of technologies on the production lines of partners, but in this area with the greatest potential the Company does not yet implement a repeatable business model. Due to the geographic and economic conditions in the market, the Company will develop its business presence mainly in the United States, Asia and Western Europe. The Company intends to build its market position through organic growth, primarily based on further development of its technology. Due to a number of factors, the Company is unable to guarantee in full that its business development model will work. The Company's future in the broadly understood printed electronics market depends on its ability to create and implement a successful long-term development strategy and to continue to develop its technology. The risk of making bad decisions resulting from improper assessment of the situation or the Company's inability to adapt to changing market conditions, incorrect strategic assumptions, including in relation to the developed technology and the adopted commercialization plan and the degree of demand from potential clients, may mean that the business development model will not be effective and the future financial results might be lower than currently expected.

#### Risk related to the difficulty with acquiring experienced and specialized employees

The high level of technological advancement of the Company's research leads to a constant increase in the requirements regarding skills and experience of employees. Next to technology, the engineering and scientific staff is the Company's most valuable asset. The pace and quality of the Company's R&D is directly related to the skills of specialists who form the R&D team. The Company employs engineers from the fields of chemistry, physics, electronics, mechanics, material engineering, programming and numerical simulations. Nearly in all these fields, the number of specialists available for hiring is not high. As regards acquisition of the best specialists, the Company competes with firms both in Poland and abroad.

As the Company expands the size of its operations, this factor may be of particular importance in the future as it might limit the development potential. Difficulties in sourcing employees may delay work or force the Company to abandon certain projects.

### **Risk of losing key team members**

The Company's activity is based on a narrow team of people with relevant know-how who pool competencies in engineering and technical, financial management and strategic management of the Company. For this reason, losing key people may adversely affect the Company's further business, its financial, property and economic condition as well as its development prospects as it may impair the Company's potential to sell its products, develop its technology, win new contracts and properly manage already existing contracts.

Most of the Company's personnel are people employed in operational roles. They do tasks which require expertise, skill and education. The Company is exposed to the risk of losing some of its operational staff, which might weaken the organizational foundations of the Company's business.

These situations might result in the Company's stability being undermined and force it to raise remuneration levels in order to retain employees. As a result, it may affect the Company's operating costs.

### **Risk of dependence on future counterparties**

Due to the specific nature of industrial implementation projects (with high contract values), commercialization of the first projects will result in major dependence on individual clients. Hence, the Company conducts projects with many partners in various markets and application fields.

The sale of printing devices and consumables does not pose such a risk due to the one-sided nature of transactions in the case of printers and the fragmented market in the case of consumables.

Due to the fact that the Company supplies advanced technical equipment, there is a risk of dependence on suppliers of materials and components. The Company tries to diversify supply sources, forges partnerships and builds a base of alternative suppliers, but it should be kept in mind that with such technically advanced devices, the replacement of components is also subject to risk in terms of efficiency of the manufactured devices.

### **Risk of potential disclosure of confidential information on technology**

Implementation of the Company's strategy depends, inter alia, on the fact that the holders of confidential information, particularly that concerning development and technological processes related to the ultra-precise printing technology. There is a risk that sensitive information will be divulged by persons connected with the Company, which may result in the information being used by competitors, despite the intellectual property protection measures used by the Company.

The indicated risk factor may have a negative impact on the Company's business, financial position, development prospects, results and share price.

### **Risk of intellectual property infringement**

The Company operates in an area where regulations concerning industrial and intellectual property rights and their protection are of significant importance. At present, there are no proceedings under way regarding infringement of any industrial or intellectual property rights in which the Company would be involved. The Company intends to conduct its business in such a way as not to infringe any third party rights in this respect. However, it can not be ruled out that third parties would bring claims against the Company regarding infringement of industrial and intellectual property rights by the Company. Even if unwarranted, such claims might adversely affect the schedule of the Company's strategy implementation, and the defense against such claims may involve significant costs, which may adversely impact the Company's financial results. In addition, during work on its own patent applications, the Company carefully reviews the

available literature and patents known at present. However, there is a risk of infringement of intellectual property rights related to patents that have been submitted but not published yet. Cooperation with external partners gives rise to similar risks. Formally unauthorized entities might attempt to use the intellectual property of XTPL by either violating or attempting to circumvent the patent application. The circumstances described above may have a material adverse effect on the Company's development prospects, results and financial position.

#### Risk of technology scaling

Due to the fact that the technology underlying the printing process developed by XTPL is based on highly innovative solutions, there is a risk that an increase in its use from laboratory to industrial scale might end up unsuccessfully. This risk may materialize due to difficulties with obtaining technology parameters in industrial production that would be equally stable as those obtained in the laboratory. In addition, there is a risk that the technology developed may not be sufficiently effective for certain production processes in industry (e.g. due to a failure to achieve satisfactory production process efficiency).

#### Risk of a failure to reach the target clients and achieve sales plans

XTPL clients will include, in particular, large manufacturers of devices for the fabrication of electronics. They have long communication and decision-making channels. There is a risk that a proposition from XTPL, as a company with a short market history, will be assessed as not reliable enough. This may delay delivery of the Company's sales targets or indeed lead to a failure to acquire a targeted client. However, an increase in sales, especially the sales of printing devices, is accompanied by a steady increase in awareness of the XTPL technology, both among direct buyers, including research institutes, and indirect ones, such as industrial partners that research institutes cooperate with. In addition, the Company itself has established a number of relationships with industrial partners and is now working with them on nine projects.

#### Risk of emergence of a competitive technological solution

New technological solutions that are in competition against XTPL are constantly being developed in the global technology market. A comparison of the parameters of the currently available solutions with the parameters achieved in the XTPL technology shows, in the Company's opinion, that competitive technologies offer solutions with weaker parameters and oftentimes higher production costs compared with what is expected to be achieved by the industrial XTPL solution. The Company has undertaken measures designed to cover its technology with extensive patent protection. As at the report date, the Company's competitive risk can be described as low, as the developed solutions are less effective than those on which the Company is working at present. However, it is not possible to rule out the possibility that a more technologically advanced or more cost-effective solution might emerge in the market. There is also a risk that competitors might significantly increase their expenditures to promote available solutions. These risks may materially affect the Company's development outlook.

#### Risk of loss of financial liquidity and access to financing

As at the Report Date, the Company's revenues from the sale of products and services, supported by grant proceeds, are sufficient to secure its operating activities. However, it should be noted that except for the sale of printing devices and nanoinks, the Company has not yet achieved stable, recurring income.

There is also a risk of financing the operations when the business is taken to an industrial scale.

### Risk of not receiving grants and subsidies

Grants and subsidies are the second source (next to share issues) of financing the Company's research and development. There is a risk of not receiving adequate grants and subsidies, which may delay research and development.

In the past, the Company entered into a grant agreement with NCBR whereby NCBR is authorized to terminate the financing in the cases enumerated in the agreement, including when (i) the Issuer refuses to undergo or hinders inspections; (ii) the Issuer has made legal and organizational changes that jeopardize the performance of the agreement or fails to inform the NCBR of its intention to make such changes; (iii) the NCBR identifies gaps in the submitted documentation on the environmental impact of the project, and such gaps are not eliminated by a stated deadline; (iv) the beneficiary fails to comply with disclosure obligations during implementation and durability period of the project; (v) irregularities, listed directly in the agreement, occur in delivery of the project. Therefore, there is a risk that NCBR might claim reimbursement of the grant provided to the Company, in whole or in part, which may affect the financial position of the Company.

### Risk of implementation of in-house technologies by the Company's potential clients

An important group of potential buyers of the technology developed by the Companies are global producers of electronic components (e.g. displays). There is a risk that these entities, which have significant technical and organizational resources, may develop their in-house nanoprinting solutions, and consequently will not be interested in the product offered by the Company.

### Risk of unforeseen events

The Company is exposed to the risk of extraordinary events, such as technical failures (e.g. of electrical networks, either internal or external), natural disasters, acts of war, etc. These events might impair the effectiveness of or disrupt the Company's operations. In such circumstances, the Company may be exposed to unforeseen costs.

### Human factor risk

In its production activity, the Company works with people employed under employment contracts and other civil law contracts. Actions performed by these persons as part of their work may lead to errors caused by improper performance of their duties. Such actions may be intentional or unintentional and may lead to disruptions and delays in the commercialization process.

### Risk of failure of the equipment used in the Company's and the Group's operations

In its operations, the Company relies on properly working specialist equipment. There is a risk that in the event of a serious equipment failure which cannot be addressed immediately, the Company may be forced to temporarily suspend some or all of its activities until the failure is removed. Equipment failures may also lead to a loss of the data used for developing the Company's product. An interruption in business or loss of key data for a particular project may result in the Company being unable to perform its obligations under existing contracts or cause a loss of these contracts, which may adversely affect the Company's financial performance.

### **Risk of insufficient insurance coverage**

The Company enters into insurance contracts in the course of its activity. However, it can not be ruled out that insurance risks will materialize in the Company's activity that will go beyond the scope of insurance coverage, or unforeseen events occur that are out of scope of the existing insurance policies. Such events may have an adverse impact on the Company's trading performance.

### **Risk of court and administrative proceedings**

According to the available information, no court or administrative proceedings are pending against the Company that would have a significant impact on its operations. However, the Company's future sales activity will give rise to potential risks associated with possible customer claims in relation to the products sold. The Company also enters into commercial contracts with external entities whereby both parties are required to provide specified service/consideration. This in turn gives rise to a risk of disputes and claims arising from such contracts. These disputes or claims may adversely affect the Company's reputation and, consequently, its financial results.

### **Risk of related-party transactions**

The Company enters into transactions with its related parties. Where competent tax authorities question the methods of how the Company has determined market conditions for related-party transactions, this may have negative tax implications for the Company, potentially causing a material adverse effect on its business, financial position and results.

### **Risk of intellectual property rights and application patents**

The Company's technology may be the basis for other entities to develop derivative or related technologies. There is a risk that such entities will decide to submit application patents based on the Company's technology. As a result, the Company, as the holder of the underlying patent, will have to cooperate with a third party, as the application patent holder, to ensure commercial implementation of a particular technology.

In terms of intellectual property rights, the Company uses works created by persons employed under employment contracts.

### **Risk related to commercialization agreements**

Due to the specific nature of its operations, the Company may use various types of commercialization agreements (license agreements, JDAs, product sale agreements, joint venture agreements). However, it is not possible to rule out the market risk related to a failure to find a partner interested in purchase of the Company's products or commercialization. Market risk is also affected by changes in potential clients' strategies, changes resulting from movements in market trends and inability to reach decision makers. In addition, account should be taken of the risk of default by a contractual partner or the risk of the Issuer's failure to abide by the terms of the contract due to materialization of any of the risks described above. Should any of these circumstances occur, this may adversely affect the Issuer's operations, financial results and/or development prospects.

## 6. Shareholding structure

### 6.1. Significant shareholdings

The shareholding structure as at the Balance Sheet Date was as follows (shareholders holding at least 5% of the total number of votes at the General Meeting):

Ref.	Shareholder	Number of shares held	% of all shares	Number of votes	% of all votes
1.	Filip Granek	316,998	15.62%	316,998	15.62%
2.	Deutsche Balaton Group*	246,203	12.13%	246,203	12.13%
3.	Sebastian Młodziński	233,657	11.51%	233,657	11.51%
4.	ACATIS Investment	195,663	9.64%	195,663	9.64%
5.	Pankiewicz Venture	185,008	9.12%	185,008	9.12%
6.	Others	851,693	41.97%	851,693	41.97%
	<b>TOTAL</b>	<b>2,029,222</b>	<b>100.0%</b>	<b>2,029,222</b>	<b>100.0%</b>

\* Deutsche Balaton AG and Heidelberger Beteiligungsholding AG

As at the Report Date, the shareholding structure was as follows (shareholders holding at least 5% of the total number of votes at the General Meeting):

Ref.	Shareholder	Number of shares held	% of all shares	Number of votes	% of all votes
1.	Filip Granek	316,998	15.62%	316,998	15.62%
2.	Deutsche Balaton Group*	246,203	12.13%	246,203	12.13%
3.	Sebastian Młodziński	224,992	11.09%	224,992	11.09%
4.	ACATIS Investment	195,663	9.64%	195,663	9.64%
5.	Pankiewicz Venture	185,028	9.12%	185,028	9.12%
6.	Others	851,693	41.97%	851,693	41.97%
	<b>TOTAL</b>	<b>2,029,222</b>	<b>100.0%</b>	<b>2,029,222</b>	<b>100.0%</b>

\* Deutsche Balaton AG and Heidelberger Beteiligungsholding AG

## 6.2. Shares held by members of management and supervisory bodies

As at xx, the Management Board and Supervisory Board members held the Company's shares as per the table below:

Ref.	Name	Role	Shares held as at the Balance Sheet Date	Shares held as at the Report Date
1.	Filip Granek, PhD	CEO	316,998	316,998
2.	Jacek Olszański	Management Board Member	1,250	1,250
3.	Wiesław Rozłucki, PhD	Chairman of the Supervisory Board	–	–
4.	Bartosz Wojciechowski, PhD	Deputy Chairman of the Supervisory Board	1000	1000
5.	Andrzej Domański	Deputy Chairman of the Supervisory Board	–	–
6.	Prof. Herbert Wirth	Supervisory Board Member	–	–
7.	Piotr Lembas	Supervisory Board Member	–	–
8.	Beata Turlejska	Supervisory Board Member	–	–

Since 18 May 2022 (publication date of the quarterly report for 2022) there have been no changes relating to significant shareholdings by Management Board or Supervisory Board members.

Other

## 7. Other

### 7.1. Management Board's statements

The Management Board of XTPL S.A. declares that to the best of its knowledge the interim condensed standalone and consolidated financial statements and the comparable data have been prepared in accordance with the applicable accounting policies and give a true, fair and clear view of the assets, financial position and profit or loss of XTPL Group. Moreover, the Management Board of XTPL S.A. declares that the management report of XTPL S.A. and XTPL Group gives a true view of development, achievements and the situation of XTPL S.A. and the Issuer's Group, including a description of key threats and risks.

Signatures of all Management Board members

**Filip Granek**  
Prezes Zarządu



**Jacek Olszański**  
Członek Zarządu



Wrocław, 21 September 2022

## 7.2. Management Board's statement on the statutory auditor

The Management Board of XTPL S.A. hereby declares that the audit firm authorized to examine financial statements and entrusted with a limited review of the interim condensed standalone and consolidated financial statements was selected in accordance with the applicable law. The audit firm and the statutory auditors performing the review met the conditions for issuing an unbiased and independent report on the review of the interim condensed standalone and consolidated financial statements, in accordance with the applicable regulations and professional standards.

Signatures of all Management Board members

**Filip Granek**  
Prezes Zarządu



**Jacek Olszański**  
Członek Zarządu



Wrocław, 21 September 2022

### 7.3. Management Board's opinion

Not applicable. The auditor has not issued any qualified opinion, adverse opinion or a disclaimer of opinion about the interim condensed standalone and consolidated financial statements.

#### 7.4. Approval for publication

The half-yearly report for the first half of 2022 ended on 30 June 2022 was approved for publication by the Management Board of the Parent Company on 21 September 2022.

Signatures of all Management Board members

**Filip Granek**  
Prezes Zarządu



**Jacek Olszański**  
Członek Zarządu



Wrocław, 21 September 2022