

**COMARCH**

2018

**ANNUAL REPORT**



**COMARCH**

**18**

**Consolidated financial  
results of Comarch Capital Group  
as of 31 December, 2018.**

**ANNUAL REPORT**



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# 1. A Letter from Comarch CEO to Shareholders

Kraków, 30th of April, 2019

Dear Shareholders,

On behalf of the Management Board, I have the honor of providing you with a report from another year of operations of the Comarch Group. In 2018, the Group materially extended its scale of operations and improved its operational profitability. Sales revenues grew by 21.7 per cent or by PLN 244.5 million versus 2017 and reached the amount of PLN 1,370 million. Profit on operations amounted to PLN 87.5 million and net profit was PLN 30.6 million. Operational profitability in 2018 was 6.4 per cent versus 5.2 per cent a year earlier.

Last year, there was a dynamic growth of sales of software developed by the Comarch Group and the related services. Customers were particularly interested in products for telecoms, the public sector and ERP systems. Due to a broad and comprehensive offer of modern IT products and high service quality, the Comarch Group is the largest domestic provider of software and a leading provider of IT services in Poland and in international markets.

In 2018, the Group successfully continued its growth strategy consisting in diversifying its operations among various sectors, developing its own products and sale thereof in global markets. The Management Board stresses that for years the Group has been making major investments in expansion and maintenance of its global sales network, as a result of which the Comarch brand and its offer has gained international recognition which effectively supports sales of Group solutions in new markets. Last year, the Comarch Group established new subsidiary companies – Comarch Mexico S.A. de C.V with its registered office in Mexico City, Comarch Yuhan Hoesa (Comarch Ltd.) with its registered office in Seoul and Comarch BV with its registered office in Rotterdam. In 2018, Comarch (Thailand) Limited, Bangkok started operations. The plans for 2019 provide for continued expansion – both domestically and abroad. In 2018, the Comarch Group made major investments in new and existing IT products. Expenditures on R&D were above 13.2% of sales revenues, and were primarily financed with the Company's own funds. The Group was intensively developing a new generation of loyalty, telecommunications and ERP systems as well as IT solutions for medicine and the Internet of Things. The Group also continued the enhancement of the other offered products. Last year, the Group put special stress on developing sales of IT solutions in the service model, and is a market leader in the area. The Comarch Group has been intensively developing the private Comarch Enterprise Cloud Platform (IaaS and PaaS) with top security standards, based on the infrastructure of the Comarch Data Center. With the solution, Comarch products may be offered in the best way for customers, providing benefits in sharing the costs of the IT infrastructure, improved performance, reliability and maximum flexibility.

Last year, the Comarch Group strengthened its position as one of the fastest growing employers in the IT sector. As at the end of 2018, the Group employed over 6 000 people in Poland and abroad. Like every year, positive effects were generated by the program of student internships as a result of which the Comarch Group is perceived as an employer of first choice in the IT sector. The Management Board of the Comarch Group has been making efforts to successfully implement the mission of propagating innovative technical ideas developed in Poland all over the world. Apart from business activity, the Comarch Group has been pursuing a corporate social responsibility policy and is getting involved in the protection and revival of national heritage, has been actively supporting NGOs and charity actions, and is a sponsor of culture, arts and sports. In 2018, the Comarch Group continued its support for the construction of a new organ and the revitalization project of music space in St. Mary's Basilica in Kraków.

I am convinced that relying on its good financial condition, in the future the Comarch Group will strengthen its market position as a global provider of IT solutions, generating value added for the shareholders, customers, employees and the entire social and economic environment.



A handwritten signature in black ink, appearing to read 'J. Filipiak'.

Professor Janusz Filipiak  
President of the Management Board  
Comarch S.A.

# 02

## Comarch Activity





Comarch  
onset

**1991**



Founding  
year

**1993**



Headquarters  
**KRAKÓW,  
POLAND**



over

**6000**

employees

### ADDED VALUE

Comarch is a software house which sells its own software products to large corporations and provides implementation and managed services



The total value of Comarch's  
shares on a Stock Exchange

**USD 500 million**

Publicly traded  
on Warsaw Stock  
Exchange since

**1999**



Thousands  
of successfully  
completed  
projects

RECOGNIZED BY  
**Gartner, Forrester,  
Research, IDC**  
and more



**93%**



of revenues from  
sales of own software  
and products

## Global Presence



**56**

**Subsidiaries**

# Comarch – worldwide customers, projects, companies, data centers



**56**  
subsidiaries



**89**  
offices



in **65**  
cities

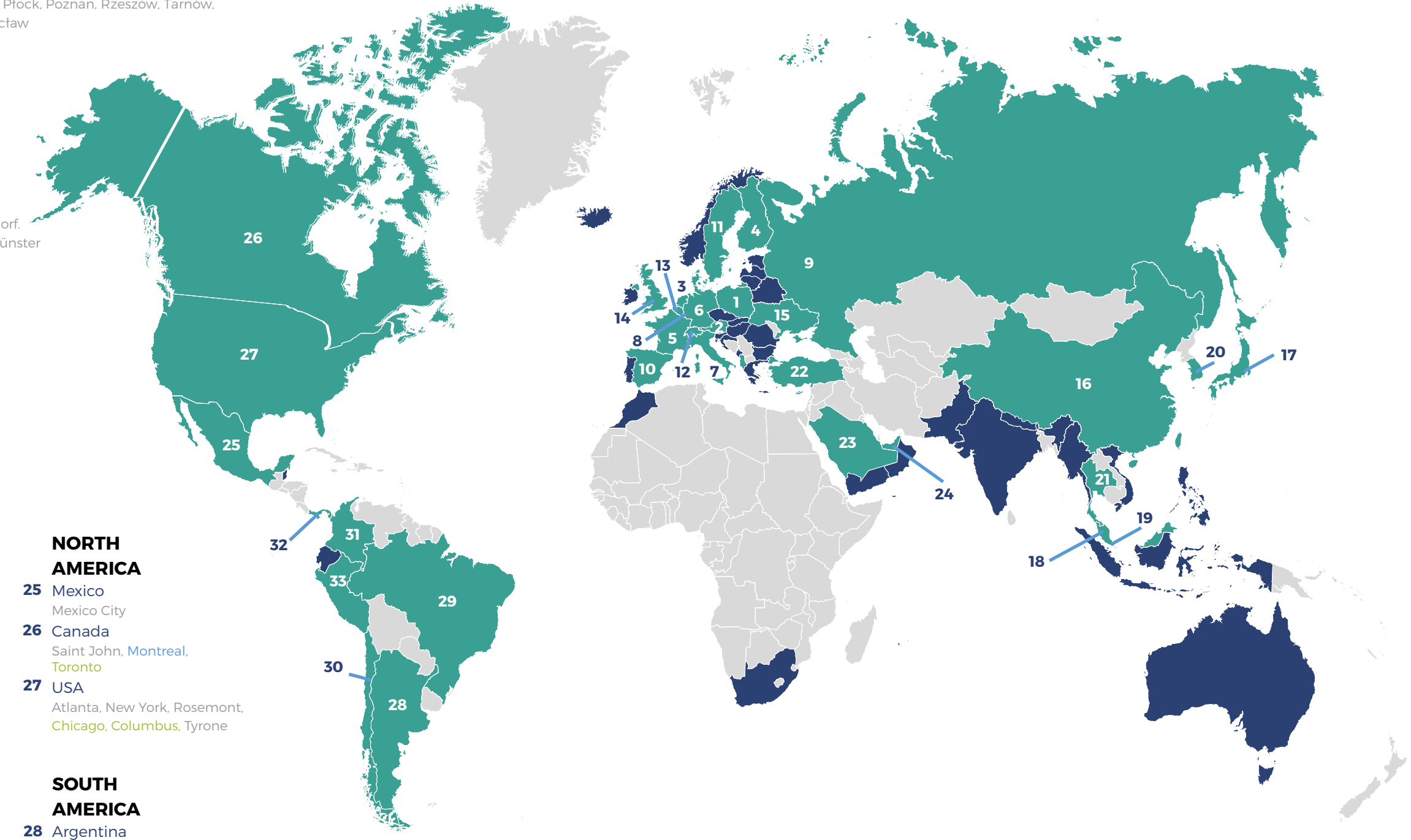



in **33**  
countries





on **4**  
continents

- EUROPE**
  - Poland  
Białystok, Bielsko-Biała, Częstochowa, Gdansk, Gliwice, Katowice, Kielce, [Kraków HQ](#), Lublin, Łódź, Płock, Poznań, Rzeszów, Tarnów, Toruń, [Warsaw](#), Wrocław, Wroclaw
  - Austria  
Innsbruck, Vienna
  - Belgium  
Brussels
  - Finland  
Espoo
  - France  
Montbonnot Saint Martin, Lille
  - Germany  
Berlin, Bremen, [Dresden](#), Düsseldorf, Hamburg, Hannover, Munich, Münster
  - Italy  
Milan, Rome
  - Luxembourg  
[Luxembourg](#)
  - Russia  
[Moscow](#)
  - Spain  
Madrid
  - Sweden  
Stockholm
  - Switzerland  
Arbon, Zug
  - The Netherlands  
Rotterdam
  - UK  
London
  - Ukraine  
Kyiv, Lviv
- ASIA**
  - China  
[Beijing](#), [Shanghai](#)
  - Japan  
Tokyo
  - Malaysia  
[Kuala Lumpur](#)
  - Singapore  
[Singapore](#)
  - South Korea  
Seoul
  - Thailand  
Bangkok
  - Turkey  
Ankara
- MIDDLE EAST**
  - Saudi Arabia  
Riyadh
  - United Arab Emirates  
Dubai
- NORTH AMERICA**
  - Mexico  
Mexico City
  - Canada  
Saint John, [Montreal](#), [Toronto](#)
  - USA  
Atlanta, New York, Rosemont, [Chicago](#), [Columbus](#), Tyrone
- SOUTH AMERICA**
  - Argentina  
Buenos Aires
  - Brazil  
Sao Paulo
  - Chile  
Santiago
  - Colombia  
Bogota
  - Panama  
Panamá City
  - Peru  
Lima



 Worldwide subsidiaries, customers, projects

 Customers and projects

 Offices and data center

 Data center

 Offices

# Operations of the Comarch Capital Group

The Comarch Capital Group is the provider of innovative IT systems for key sectors of the economy in Poland and abroad. The core strategy of Comarch is to provide customers with comprehensive IT solutions based on their own products and also in the service model. With high class specialists and the professional infrastructure, Comarch is able to provide both IT products and implementation and maintenance services, as well as consulting and integration services for customers all over the world. As a result, buyers of products and services offered by Comarch have full access to modern IT services and can optimize their business processes.

The broad range of Comarch's offer covers ERP-class systems, financial and accounting systems, CRM systems, loyalty software, systems supporting sales and electronic document exchange, electronic banking systems, OCT network management systems, billing systems, business intelligence software, security and data protection management services and many other solutions. Comarch is a provider of solutions for instance to public administration entities, for banks, accountancy offices, FMCG enterprises, airlines, automotive companies, the medical sector, manufacturing companies, utility companies, capital markets, telecom and insurance companies, universities, trading and service companies, transport companies, fuel suppliers and entities involved in brokerage services, e-commerce or factoring services. A detailed description of the provided products and services is provided in Section 3 of the Management Report of Comarch S.A. on the operations of the Capital Group in 2018.

In planning its development strategy, Comarch provides for social and environmental aspects and deliberately limits the impact of its operations on the natural environment, minimizing the consumption of natural resources and limiting waste generated as a result of ongoing operations.

Comarch is a member of important IT organizations, such as ETIS, PIKOM, and TeleManagement Forum, based on which it has continuous access to the latest standards emerging in these areas (e.g. standards concerning TAP/RAP). Comarch also belongs to international chambers of commerce, such as the German-Polish Chamber of Industry and the Commerce and the French-Polish Chamber of Industry. It is also a member of Związek Maklerów i Doradców (ZMiD) (English: Association of Stock Brokers and Counsellors) which is an organization of licensed stock brokers, investment advisers, and commodity market brokers. It is also a member of the Polish Association of Listed Companies. In Spain, Comarch is a member of Confederación de Empresarios de Málaga (CEM), or the Confederation of Employers of Málaga. CEM is an organization that associates entrepreneurs from the confederate and inter-sector with a reach covering the province. In Japan, Comarch belongs to 21c Club within EGG JAPAN. 21c Club supports companies in creating and developing new B2B companies and serves also as a platform to exchange expertise and experiences. Comarch is also a member of the LF Networking Fund, a new initiative of The Linux Foundation which strengthened cooperation among partners and improves operational effectiveness in network development projects.



## GLOBAL OPERATIONS

At the time of writing, Comarch SA has 17 branches in Poland. The Comarch Group is composed of 56 companies located on four continents, in 33 countries with 89 offices all over the world. Last year, the Group successfully continued its growth strategy consisting in diversifying its operations among various sectors, developing its own products and sales thereof in global markets. For many years, it has been a core strategic objective of Comarch to develop sales of an increasing number of products in foreign markets, in particular in Western Europe, both Americas and Asia. Last year, the Comarch Group established new subsidiary companies – Comarch Mexico S.A. de C.V with its registered office in Mexico City, Comarch Yuhan Hoesa (Comarch Ltd.) with its registered office in Seoul, South Korea, Comarch (Thailand) Limited with its registered office in Bangkok, Thailand and Comarch BV with its registered office in Rotterdam, the Netherlands. The plans for 2019 provide for other capital investments – both domestically and abroad.

## RECIPIENTS OF PRODUCTS & SERVICES

In view of the type of IT systems offered by Comarch, the core group of buyers is composed of medium-sized and large enterprises that on a global scale are the largest customers for advanced IT solutions. Most of the Comarch products are addressed to specific buyer groups while IT services are offered to companies in all sectors due to their universal nature. The Comarch offer is addressed to Polish and foreign entities. For many years, a core strategic objective of Comarch is to develop sales of an increasing number of products in foreign markets, in particular in Western Europe, both Americas and in Asia. Sales by the Comarch Group are much diversified and the Group is not dependent on any single buyer. Similarly to Comarch SA, in 2018 sales to a single counterparty in the Comarch Group did not exceed 10% of total sales.

The fundamental principles of the Comarch Capital Group include responsibility for customers' success and respect and openness to their needs. Comarch provides its customers with innovative top quality IT products that result from high skills, experience and competencies of its employees, and cooperation with leading research and scientific centers in Poland and abroad. The company endeavors that the provided IT solutions comply with top standards and customers' expectations.

## PROSPECTS OF BUSINESS DEVELOPMENT AND ANTICIPATED FINANCIAL CONDITION OF THE GROUP IN 2019

In 2018 there was a growth of demand for IT services and products of the Comarch Group. The Group recorded a major growth of demand for telecom sector solutions, for the public sector and with respect to ERP products, as well as stable demand for IT solutions by customers in other sectors. The Group's order portfolio now ensures full use of its production potential over several future periods. Developments of the political and economic situation in Poland and in the world, as well as the situation in the labor market, will materially affect the business and financial results of the Comarch Group in 2019. Having consistently and for many years followed the strategy of positioning itself in the market as a technological and product company, Comarch has an offer that is very well diversified. The group of customers keeps expanding and many of them are international companies to support further development of the company. The dynamically growing business of the Comarch Group in foreign markets additionally contributes to growing sales and enhances the image of Comarch among customers, thus consolidating its competitive position. The above also requires numerous capital investments outside Poland (mainly by setting up foreign subsidiaries). Strategies of enterprises are largely subject to macroeconomic conditions independent of Comarch, in particular to investment levels in IT made by medium-sized and large companies in Poland and abroad, and to the intensifying competition in the IT labor market. Additionally, effective management of operational risks is another condition required to implement strategies. Opportunities of the Group consist in its innovative nature and growing demand for the provision of IT services in a service model – with its broad range of its own products, its infrastructure, human and capital resources, the Comarch Group is able to adapt flexibly to the business models demanded by customers.

The major operational risks inherent in the Group's business include:

- Risks related to R&D work (development of its own software products)
- Risks related to the performance of long-term contracts
- Risks related to default on contracts and counterparties drawing on performance bonds and contractual penalties they are entitled to
- Risks related to foreign economic, legal and political environment in the context of export contracts
- Credit risk related to sales with deferred payment and often long time of contract performance
- Risk of staff turnover, risk of lack of an adequate number of qualified staff, risk of growing labor costs
- FX risk and interest rate risk
- Risks related to international terrorism which affects business trips to various regions of the world

The Group anticipates no material changes to its financial condition and to risks inherent in its business.



## 15 CHARACTERISTICS OF FACTORS MATERIAL TO THE DEVELOPMENT OF THE CAPITAL GROUP

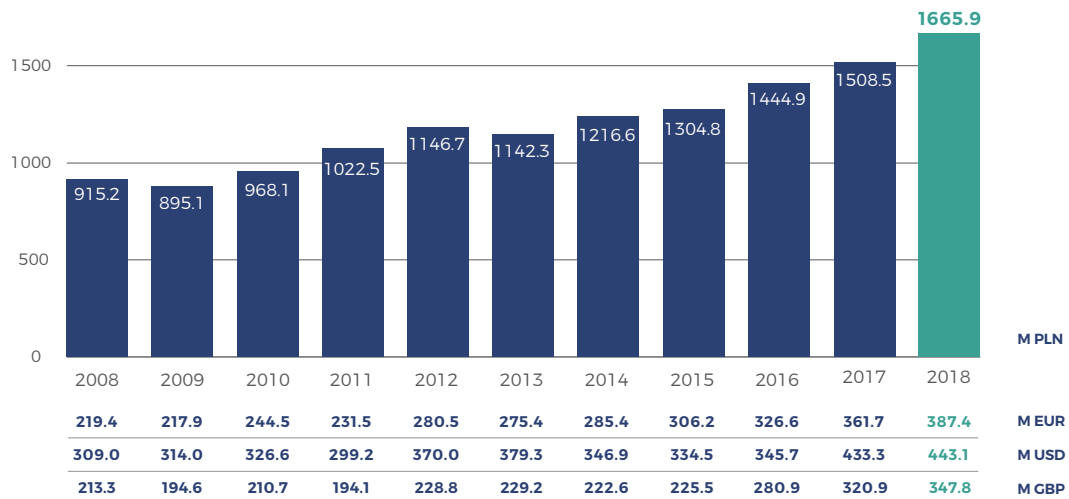
### Internal factors:

- Continuous growth of sales and importance of foreign business
- Position and reputation of the Comarch Group affecting the type of attracted customers;
- The activity of the Comarch Group in the Special Economic Zone in Kraków
- A material share of standard (recurring) products in sales which means: lower costs, in particular variable costs related to individual contracts
- Possibility of a material increase of profitability on individual contracts while reducing charges to customers (licence fees)
- A broader and more diversified customer group meaning growing scale of business,
- An attractive training policy and attractive employment conditions offered to the staff of Group companies
- Improved recognition of the Comarch brand among potential customers as a result of marketing campaigns (including sports marketing) and social activities;
- The need to make ongoing investments in human capital in order to keep the company competitive in the future
- A high level of investment in for R&D activities and development of new IT products and services
- A high level of investments related to the development of production facilities in Poland and abroad (material investments) and to foreign expansion (capital investments)

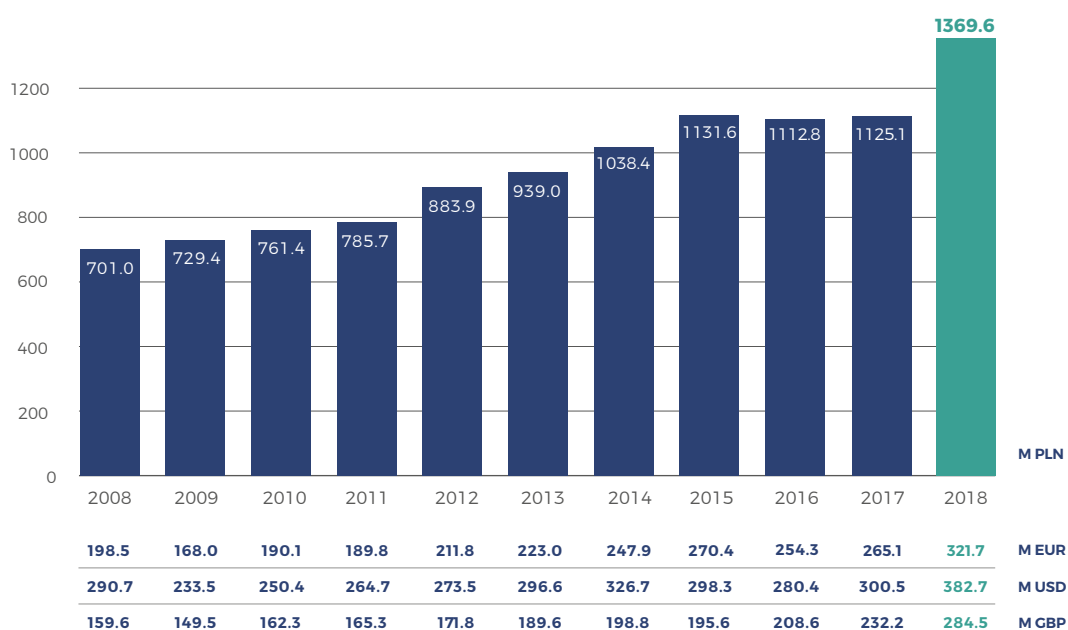
### External factors:

- Growing demand of IT systems on the part of customers. Demand has been growing for complex IT systems dedicated to specific users. This better positions larger IT companies like the Comarch Group that offer a number of various technologies and products and are able to provide technologically advanced solutions;
- Growing importance of mobile technologies, now commonly applied in IT solutions for all user groups;
- Changing business models in many sectors and changing business strategies of many companies related to technological progress and economic growth. This affects demand for new IT systems, the growth of sales in cloud computing models means increased capital and resource requirements for IT companies;
- Access by Polish companies to EU structural funds that are partly addressed to support development of IT systems and to finance R&D work;
- Growing competition resulting in lower margins; competition among IT companies;
- Constant pressure of rising salaries in IT, decreasing number of university graduates with IT education;
- Intensifying competition in the local IT labor market in Kraków and other places where the Group operates;
- International economic situation, with special focus on the condition in financial markets that affects the volume of demand for IT products and services;
- Volatility of exchange rates, in particular EUR/PLN and USD/PLN, GBP/PLN, CAD/PLN, CHF/EUR, BRL/PLN and RUB/PLN, affecting return on foreign sales;
- Global economic condition, in particular in Europe, that affects the volume of demand for IT products and services in the market and financial reliability of local customers;
- International political situation, for instance growing risk of terrorist attacks at locations where projects are carried out.

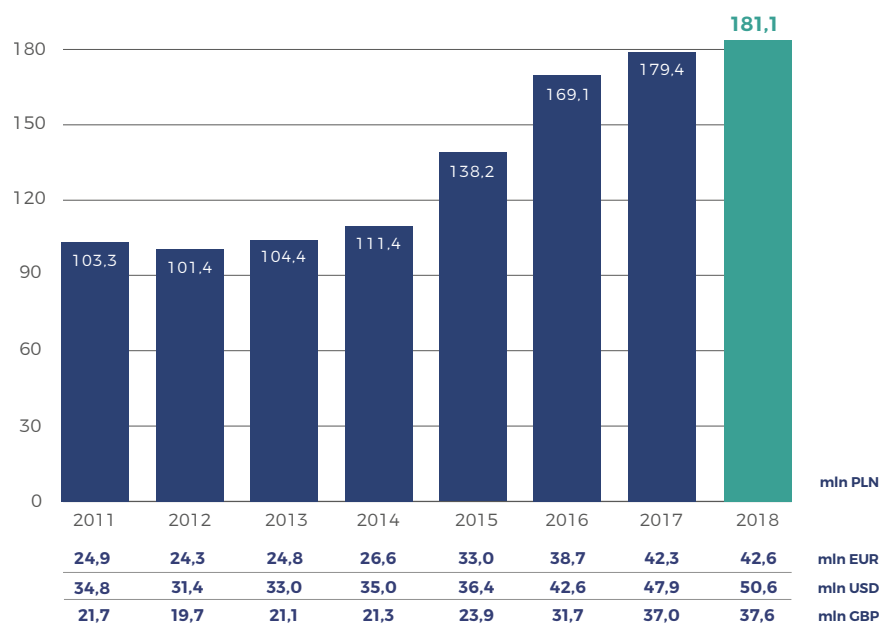
## Balance sheet total



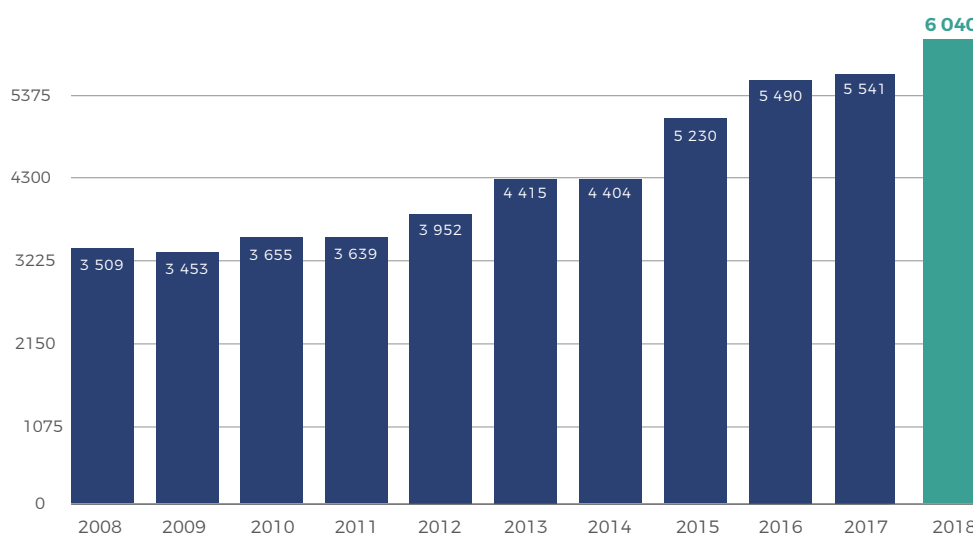
## Sales revenue



# Research and development expenditure



# Employment





**1991**

- Creation of Computer and Communications Consultants Ltd. Sp. z o.o. (9/05/1991). Incorporation of CCC Ltd. with Companies House on 16/05/1991

**1993**

- As a result of the merger of EJ Filipiak with CCC Ltd. (28/10/1993), Comarch Sp. z o.o. is established in room 415, building B5 of the University of Science and Technology AGH in Kraków

**1994**

- Comarch's first contract (5/10/1994) with its first client Telekomunikacja Polska SA – Comarch implemented the SEZtel system

**1998**

- Comarch becomes the first Polish partner of Oracle

**1999**

- Stock Exchange debut in Warsaw
- Entering the USt market
- Comarch and RMF FM establish Interia.pl portal

**2000**

- Comarch recognized by the World Economic Forum in Davos as a the "Technology Pioneer"

**2001**

- Start-up of a company in the Special Economic Zone in Kraków
- Company shares included in the WIG20 index

**2002**

- Beginning of business development in Central America – contract signed with Enitel, a national operator in Nicaragua
- Contract signed with British Petroleum

**2003**

- MKS Cracovia SSA becomes part of Comarch Capital Group
- Opening of branches in Moscow and Wrocław
- Acquisition of CDN – Software House of ERP

**2004**

- Start-up of a company in Dubai Internet City
- Start-up of Comarch Panama Inc. in Panama City

**2005**

- Establishment of Comarch Data Center in Kraków
- Start-up of Comarch AG in Brussels

**2006**

- Contracts with T-Mobile Germany (currently Telekom Deutschland) and T-Mobile Austria to provide the Network & Service Inventory System
- Contract signed with Auchan

**2007**

- Sale of Interia.pl

**2008**

- Acquisition of German MSP Software House with operations in Austria, Germany and Switzerland – SoftM Software und Beratung AG Company listed on the Frankfurt am Main Stock Exchange
- Start-up of the first company under Comarch Corporate Finance FIZ dedicated to iMed24 SA telemedicine
- Introduction of loyalty programs on the American market

**2009**

- Opening of the Training & Conference Center and the Administration Division of Comarch in SSE4 in Kraków
- Signing a framework agreement with ING Bank Śląski.
- Starting cooperation with Alior Bank

**2010**

- In the 2010/2011 season, Comarch is the main sponsor of the TSV 1860 Bavarian football team
- Contract signed with Diageo
- Comarch chosen by E-Plus to be the supplier of the Next Generation Network Planning solution
- Launch of Wszystko.pl – a virtual shopping center (first B2C project in the ERP Division)

**2012**

- Opening of iMed24 Medical Center
- Comarch logo on shirts of the French AC Nancy football team
- Acquisition of Swiss A-MEA Informatik AG company
- Start-up of a company in London
- Acquisition of ESAProjekt – a medical software house
- Contract signed with the Italian UniCredit

**2013**

- 5 000 network devices and 2 000 servers operating for 100 clients in 17 countries under the supervision of Comarch Network Operations Center
- Professor Filipiak as a guest of Gartner Mastermind Interview
- Contract signed with Síminn, a leading Icelandic operator
- Contract signed for Podlaski e-Zdrowie IT System
- 20th anniversary of Comarch
- Start-up of a company in Santiago, Chile

**2014**

- Lunch of Comarch ERP Society, the first platform for B2B knowledge exchange in Poland
- Contract signed with Air Austral
- Comarch with "Black Shirts" of Polonia Warszawa
- Further expansion of Comarch in the Middle East
- Contract with TVCable from Ecuador
- Contract with BCK Bank (Bank Gospodarstwa Krajowego)
- Start-up of a company in Spain

**2015**

- Launch of Comarch Beacon
- Start-up of companies in Argentina, Brazil, Canada, Malaysia, Sweden, Turkey and Italy
- Contract signed with Thomas Cook
- Creation of the new entity Comarch Healthcare S.A.
- Comarch as the main sponsor the Swiss football club Zug 94
- Business development in Scandinavia: SAS and Norwegian sign contract with Comarch
- BP chooses Comarch Loyalty Management to enrich loyalty program in Spain
- Opening of the SSE6 office building in the Kraków Special Economic Zone
- Cracovia ice hockey team wins the Polish Cup

**2016**

- Comarch Cracovia wins the Polish ice hockey league 2015/2016
- Comarch develops the "Pilgrim" application for mobile devices to support the pilgrims in Kraków for the World Youth Days 2016
- Specialists from Comarch take second place in the NATO Hackathon competition

**2017**

- Opening of a modern laboratory –production hall "IoT Lab" at Comarch campus in the Special Economic Zone in Czyżyny
- Opening of the office building in Łódź
- acquisition of Polish company - Geopolis
- Comarch Cracovia ice hockey team wins the Polish ice hockey league 2016/2017
- Opening of a new subsidiary in Saudi Arabia and Japan

**2018**

- Comarch celebrates its 25th anniversary
- Inauguration of data center in France
- New office building in Kraków Economic Zone
- Opening offices in Mexico, South Korea and the Netherlands
- Contract to help Korean LG U+ to launch one of the first 5G networks worldwide

**2019**

- Opening an office in Australia
- Sponsoring the football club OSC from Lille, France
- Comarch celebrates its 20th anniversary on The Warsaw Stock Exchange

# 03

The background of the slide is a teal-colored overlay on a blurred photograph. The photograph shows a pair of hands holding a tablet computer. The screen of the tablet displays several financial charts, including bar graphs and line graphs, which are partially visible through the teal tint. The overall composition is clean and professional, typical of a corporate presentation.

## Financial analysis

# Basic Economics and Financial Values

## SELECTED FINANCIAL DATA (IN THOUSANDS OF PLN)

	2018	2017**	2016	2015	2014
Revenues from sales	1.369.619	1.125.110	1.112.813	1.131.580	1.038.351
Revenues from sales of proprietary IT solutions	1.242.114	1.047.393	1.041.133	994.152	910.216
Operating profit	87.543	58.364	116.893	113.028	98.529
EBITDA*	152.748	122.673	179.901	166.511	152.909
Profit before income tax	62.480	87.149	104.777	108.129	92.577
Net profit attributable to the Parent Company's shareholders	30.616	64.626	73.034	79.651	67.894
Profit per share	3.76	7.95	8.98	9.80	8.37
Assets	1.665.945	1.508.452	1.444.875	1.304.828	1.216.555
Equity	876.108	851.190	862.064	780.581	700.693

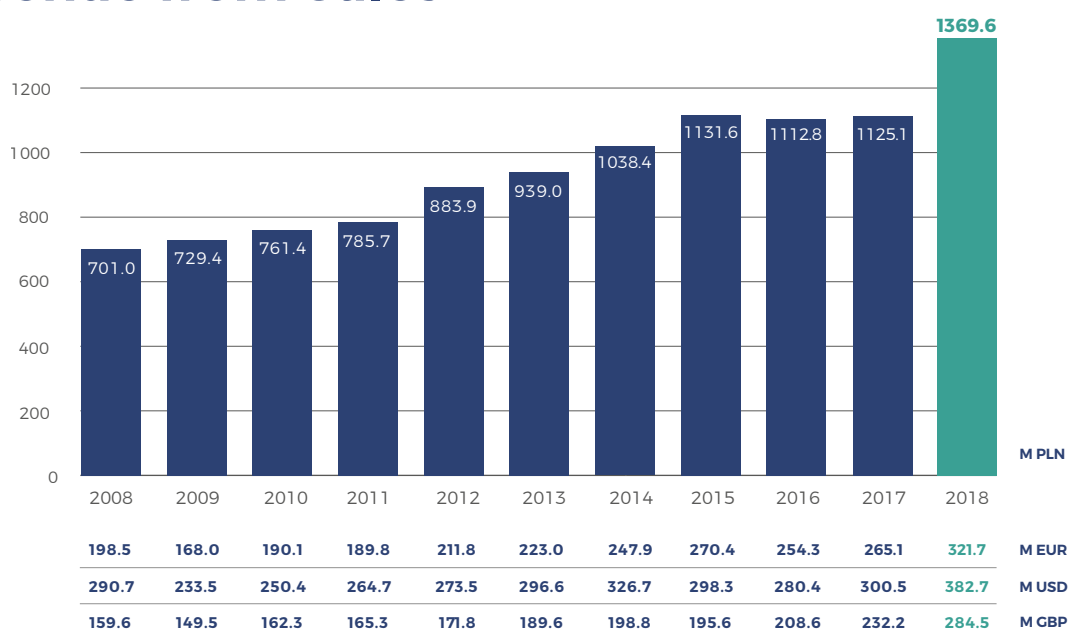
\*Operating profit + Depreciation

\*\*From 1 January 2018, the Group started using the principles resulting from IFRS 15 for sales revenues. For comparative purposes, the data for the 2017 was also restated in accordance with IFRS 15. Data for 2014-2016 have not been restated in accordance with IFRS 15.

In 2018, revenues from Comarch Group sales were higher than PLN 244.5 million, i.e. 21.7% compared to the previous year. Operating profit amounted to PLN 87.5 million and was higher by 50.0% compared to that achieved in 2017. Net profit attributable to the Parent Company's shareholders in 2018 was lower by 52.6% and amounted to PLN 30.6 million. Operating profitability amounted to 6.4% (in the previous year 5.2%), net profitability 2.2% (5.7% in 2017).

The value of assets of the Comarch Group at the end of 2018 increased by PLN 157.5 million compared to the previous year, i.e. by 10.4%. The value of equity increased in 2018 by PLN 24.9 million, mainly as a result of the transfer of retained profit for 2017 to supplementary capital and development of net profit in 2018.

## Revenue from Sales



## Sales Structure

### REVENUE FROM SALES- GEOGRAPHICAL STRUCTURE (IN THOUSANDS OF PLN)

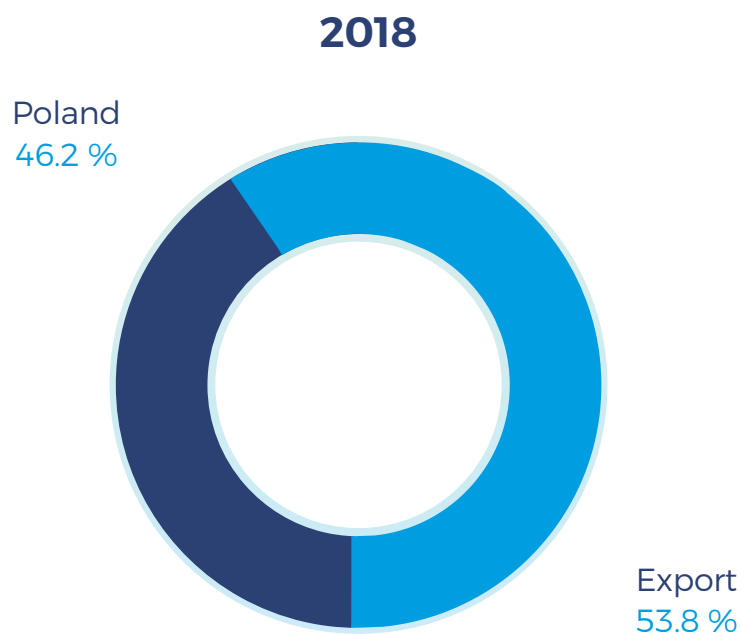
	2018	%	2017	%	2016	%
Domestic	632.372	46.2%	462.922	41.1%	451.680	40.6%
Export	737.247	53.8%	662.188	58.9%	661.133	59.4%
<b>Total</b>	<b>1.369.619</b>	<b>100.0%</b>	<b>1.125.110</b>	<b>100.0%</b>	<b>1.112.813</b>	<b>100.0%</b>

\*From 1 January 2018, the Group started using the principles resulting from IFRS 15 for sales revenues. For comparative purposes, the data for the 2017 was also restated in accordance with IFRS 15. Data for 2016 have not been restated in accordance with IFRS 15.

In 2018, the Group generated PLN 632.372 thousand of revenues from domestic sales, by PLN 169.450 thousand (i.e. by 36.6%) more than in 2017. Such a large increase was mainly due to the development of sales to clients from the public sector and the growing sales of ERP solutions to the SME sector in Poland.

The value of revenues from export sales in 2018 amounted PLN to 737.247 thousand and were higher by PLN 75.059 thousand (i.e. by 11.3%) than in the previous year and accounted for 53.8% of the Group's total revenue.

### THE GEOGRAPHICAL STRUCTURE OF SALES



## REVENUE FROM SALES – MARKET STRUCTURE (IN THOUSANDS OF PLN)

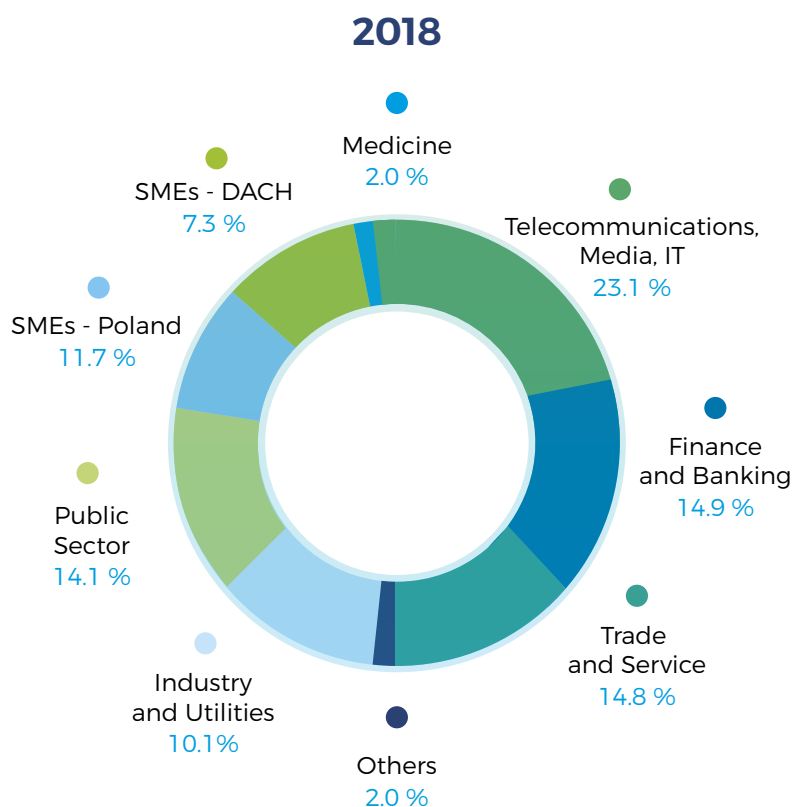
	2018	%	2017	%	2016	%
Telecommunication, Media, IT	316.416	23.1%	264.866	23.5%	276.620	24.9%
Finance and Banking	204.532	14.9%	187.168	16.6%	163.811	14.7%
Trade and Services	202.406	14.8%	187.367	16.7%	183.314	16.5%
Industry & Utilities	138.344	10.1%	143.105	12.7%	146.100	13.1%
Public Sector	193.000	14.1%	64.018	5.7%	72.856	6.5%
Small and Medium Enterprises – Poland	160.874	11.7%	136.085	12.1%	116.566	10.5%
Small and Medium Enterprises – DACH	99.568	7.3%	99.771	8.9%	111.223	10.0%
Medical Sector	27.351	2.0%	16.020	1.4%	13.184	1.2%
Others	27.128	2.0%	26.710	2.4%	29.139	2.6%
<b>Total</b>	<b>1.369.619</b>	<b>100.0%</b>	<b>1.125.110</b>	<b>100.0%</b>	<b>1.112.813</b>	<b>100.0%</b>

\*From 1 January 2018, the Group started using the principles resulting from IFRS 15 for sales revenues. For comparative purposes, the data for the 2017 was also restated in accordance with IFRS 15. Data for 2016 have not been restated in accordance with IFRS 15.

In 2018, sales revenue of the Comarch Group to clients from the TMT sector amounted to PLN 316.416 thousand, which means an increase of PLN 51.550 thousand (i.e. by 19.5%) compared to 2017, thanks to the implementation of new contracts acquired on foreign markets. Clients from the finance and banking sector purchased products and services in the amount of PLN 204.532 thousand, higher than in the previous year by PLN 17.364 thousand, i.e. by 9.3%, which is due to the increase in revenue from sales on the domestic market. The increase was recorded in

the sales of loyalty solutions, EDI and ICT to customers from the trade and services sector (of PLN 15.039 thousand, i.e. 8.0%), while it decreased in the case of customers from the industry and utilities sector (by PLN 4,761 thousand, i.e. by 3.3%). Revenue from sales to the public sector recipients grew dynamically, by PLN 128,982 thousand, i.e. by 201.5%, mainly due to the implementation of a contract for the supply and implementation of a digital system for registering court proceedings in common courts.

## THE STRUCTURE OF SALES REMAINED STABLE DURING THE FINANCIAL YEAR



There was also an increase in the case of sales to the medical sector (increase by PLN 11.331 thousand, i.e. by 70.7%), as a result of new contracts for computerization of hospitals. Customers from the SME sector in Poland purchased products and services, which were higher than PLN 24.789 thousand (i.e. 18.2%) in the previous

year. Sales to clients from the SME sector in the DACH region and to other clients remained at a level similar to that achieved in the previous year.

The structure of sales remained stable during the financial year.

## REVENUES FROM SALES – PRODUCTS STRUCTURE (IN THOUSANDS OF PLN)

	2018	%	2017	%	2016	%
Services	992.627	72.4%	871.415	77.4%	859.367	77.2%
Proprietary Software	207.271	15.1%	175.174	15.6%	178.092	16.0%
Third party Software	24.041	1.8%	13.475	1.2%	21.086	1.9%
Finished goods	42.216	3.1%	804	0.1%	3.674	0.4%
Hardware	55.728	4.1%	10.096	0.9%	9.038	0.8%
Others	47.736	3.5%	54.146	4.8%	41.556	3.7%
<b>Total</b>	<b>1.369.619</b>	<b>100.0%</b>	<b>1.125.110</b>	<b>100.0%</b>	<b>1.112.813</b>	<b>100.0%</b>

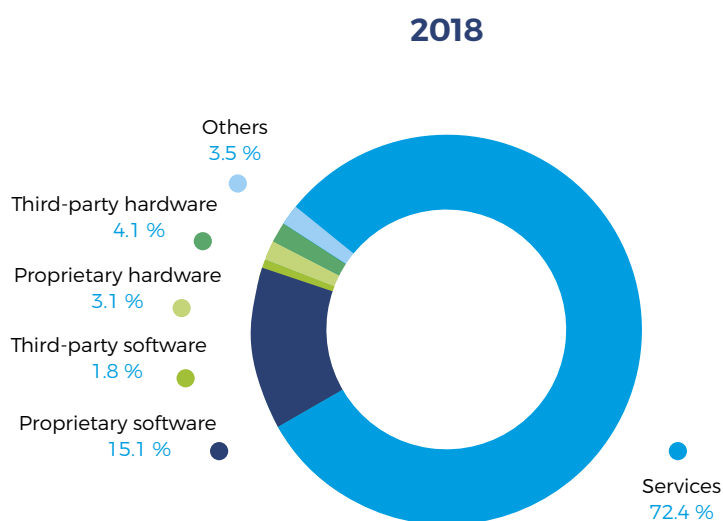
\*From 1 January 2018, the Group started using the principles resulting from IFRS 15 for sales revenues. For comparative purposes, the data for the 2017 was also restated in accordance with IFRS 15. Data for 2016 have not been restated in accordance with IFRS 15

In 2018, the value of revenue from sales of proprietary software amounted to PLN 207.271 thousand and was higher by PLN 32.097 thousand (i.e. 18.3%) than in the previous year. Revenue from sales of services increased by PLN 121.212 thousand, i.e. by 13.9%. The sales of finished goods increased very significantly, by PLN 41.412 thousand, i.e. by 5,150.7%, similarly sales of third-party hardware (increase in revenue of PLN 45.632 thousand, i.e. by 452.0%). This was the result of the implementation in Q2 and Q3 2018 of

the contract for the supply and implementation of a digital system for registering court proceedings in common courts. Revenue from sales of the third-party software increased by PLN 10.566 thousand, i.e. by 78.4%. Other sales decreased by PLN 6,410 thousand, i.e. by 11.8%.

Over the whole of 2018, sales structure by products remained stable.

## REVENUES FROM SALES – PRODUCTS STRUCTURE







# 04

## Company Bodies



## Management Board

### PROFESSOR JANUSZ FILIPIAK

Founder, President of the Management Board  
Chief Executive Officer of Comarch SA

### MARCIN DĄBROWSKI

Vice-President of  
the Management Board  
Director of Telecommunications  
Division

### PAWEŁ PROKOP

Vice-President of  
the Management Board  
Director of Public Sector Division

### ANDRZEJ PRZEWIĘŻLIKOWSKI

Vice-President of  
the Management Board  
Director of Financial Services Division

### ZBIGNIEW RYMARCZYK

Vice-President of  
the Management Board  
Director of ERP Division

### KONRAD TARAŃSKI

Vice-President of  
the Management Board  
Chief Financial Officer

### MARCIN WARWAS

Vice-President of  
the Management Board  
Director of Services Division

## Supervisory Board

### ELŻBIETA FILIPIAK

Chair of the Supervisory Board

### MACIEJ BRZEZIŃSKI

Deputy Chair of  
the Supervisory Board

### ROBERT BEDNARSKI

Member of the Supervisory Board

### DANUTA DROBNIAK

Member of the Supervisory Board

### WOJCIECH KUCHARZYK

Member of the Supervisory Board

### ANNA ŁAWRYNOWICZ

Member of the Supervisory Board

### ANNA PRUSKA

Member of the Supervisory Board

## Audit Committee

### DANUTA DROBNIAK

Chair of the Audit Committee

### ELŻBIETA FILIPIAK

Member of the Audit Committee

### ROBERT BEDNARSKI

Member of the Audit Committee

# Organizational and competence structure of Comarch capital group

Comarch SA (Kraków, Poland)



**Prof. Janusz Filipiak**

Founder and CEO of Comarch SA  
Strategy, HR, Marketing



**Konrad Tarański**

Finance, Administration  
and Internal IT Systems,  
CFO, Vice-President  
of the Management Board

## DIVISIONS



**Marcin Dąbrowski**

Vice-President of  
the Management Board,  
Director of  
**TELECOMMUNICATIONS  
DIVISION**



**Paweł Prokop**

Vice-President of  
the Management Board,  
Director of  
**PUBLIC SECTOR  
DIVISION**



**Andrzej Przewięźlikowski**

Vice-President of  
the Management Board,  
Director of  
**FINANCIAL SERVICES  
DIVISION**



**Zbigniew Rymarczyk**

Vice-President of  
the Management Board,  
Director of  
**ERP  
DIVISION**



**Marcin Warwas**

Vice-President of  
the Management Board,  
Director of  
**SERVICES  
DIVISION**



**Piotr Janas**

Director of  
**IOT  
DIVISION**



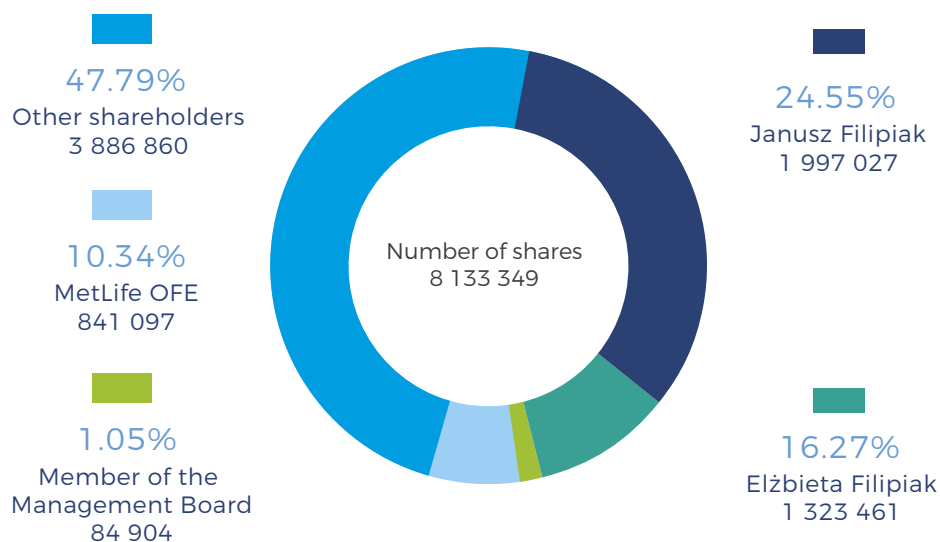
**Marcin Romanowski**

Director of  
**E-HEALTH  
DIVISION**

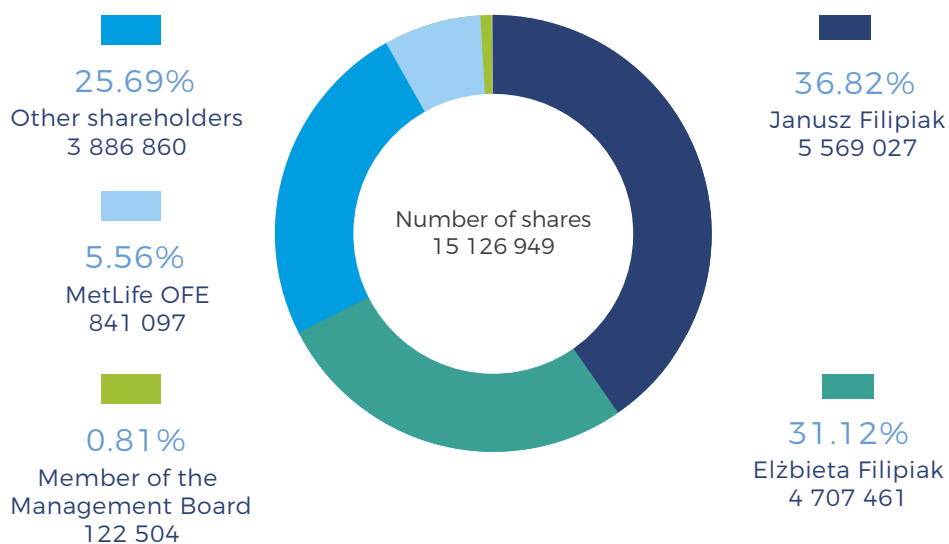
# Shareholders

Comarch S.A.'s share capital consists of 8,133,349 shares at total nominal value of PLN 8,133,349. According to the information possessed by Comarch S.A.,

as of 31st of December, 2018, shareholders holding at least 5% of votes at the Company's AGM were Janusz Filipiak, Elżbieta Filipiak and MetLife OFE.



Shareholding Structure. Number of votes 29.04.2019



Shareholding Structure. Number of shares. 29.04.2019

\*) On the 4<sup>th</sup> of March, 2019, the Management Board of Comarch S.A. received from a person acting as a managing person, a notification of transactions referred to in Article 19 par. 1 of the Regulation of the European Parliament and the EU Council No. 596/2014 dated the 16<sup>th</sup> of April, 2014, on market abuse. This transaction concerned a purchase on the 4<sup>th</sup> of March, 2018, 70 ordinary bearer shares on regulated market at the weighted average price of PLN 157.00 per 1 share. The value of the transaction amounted to PLN 10,990. The Company announced details in current report no. HYPERLINK "<https://www.comarch.pl/relacje-inwestorskie/raporty-biezace/rb-4-2019-informacja-o-transakcjach-na-akcjach-comarch-sa/>" RB-4-2019, ENC: HYPERLINK "<https://www.comarch.com/investors/investor-reports/rb-4-2019-information-on-transactions-on-comarch-sa-shares/>" RB-4-2019, dated the 4<sup>th</sup> of March, 2019.

# Organizational structure of Comarch capital group

## POLAND

- Comarch S.A.
- Comarch Technologies sp. z o.o.
- CA Consulting S.A.
- Comarch Management sp. z o.o.
- Comarch Corporate Finance Fundusz Inwestycyjny Zamknięty
- Comarch Management sp. z o.o. SK-A "Bonus MANAGEMENT spółka z ograniczoną odpowiedzialnością" Cracovia Park SK-A Bonus Management sp. z o.o. SK-A Bonus Development sp. z o.o. SK-A Bonus Management sp. z o.o. II Activia SK-A Bonus Development sp. z o.o. II Koncept SK-A Comarch Healthcare S.A.
- Comarch Polska S.A.
- Comarch Pointshub S.A.
- Comarch Infrastruktura S.A.
- iComarch24 S.A.
- CASA Management and Consulting sp. z o.o. SK-A Geopolis Sp. z o.o.
- Opso sp. z o.o.
- MKS Cracovia SSA

## EUROPE

- Comarch S.A.S. – France
- Comarch R&D S.à r.l. – France
- Comarch Luxembourg S.à r.l. – Luxemburg.
- Comarch LLC – Ukraine
- Comarch OOO – Russia
- Comarch Technologies OY – Finland
- Comarch UK Ltd. – United Kingdom
- Comarch Software Spain S.L.U. – Spain
- Comarch Yazilim A.S. – Turkey
- Comarch S.R.L. – Italy

- Comarch s.r.o – Slovakia
- Comarch AB – Sweden
- Comarch AG – Germany
- Comarch Software und Beratung AG – Germany
- Comarch Solutions GmbH – Austria
- Comarch Swiss AG – Switzerland
- CAMS AG – Switzerland
- Comarch BV – The Netherlands

## NORTH AMERICA

- Comarch, Inc. – USA
- Comarch Pointshub, Inc. – USA
- Comarch Canada Corp. – Canada
- Comarch Espace Connecté Inc. – Canada

## CENTRAL & SOUTH AMERICA

- Comarch Panama, Inc. – Panama
- Comarch Sistemas LTDA – Brazil
- Comarch Chile SpA – Chile
- Comarch Colombia S.A.S. – Columbia
- Comarch Argentina S.A. – Argentina
- Comarch Peru S.A.C. – Republic of Peru
- Comarch Mexico S.A. de C.V. – Mexico

## ASIA

- Comarch Software (Shanghai) Co. Ltd – China
- COMARCH MALAYSIA SDN. BHD. – Malaysia
- Comarch Japan KK – Japan
- Comarch Yuhan Hoesa (Comarch Ltd.) – South Korea
- Comarch (Thailand) Limited – Thailand

## MIDDLE EAST

- Comarch Middle East FZ LLC – United Arab Emirates
- Comarch Saudi Arabia Co. – Saudi Arabia

## Changes in Ownership and Organizational Structure in 2018

- On the 22<sup>nd</sup> of March, 2018, the Extraordinary General Meeting of Comarch Healthcare S.A. has adopted a resolution about the increase of the share capital by PLN 2 million, i.e. from PLN 10,114,806 thousand to PLN 12,114,806 thousand. Comarch Software und Beratung AG acquired in its entirety a new share issue, i.e. 2 million shares with a nominal value of PLN 1.00 and an issue price of PLN 10.00 per share. On 6<sup>th</sup> of July, 2018, the share capital increase was registered.
- On the 11<sup>th</sup> of May, 2018, the increase of capital in Comarch Management Sp. z o.o. was registered by PLN 100,000, i.e. from PLN 300,000 to PLN 400,000.
- On the 13<sup>th</sup> of April, 2018, a subsidiary company Comarch Mexico S.A. de C.V. was registered. The share capital amounts to MXN 500,000 and consists of 500 shares with the nominal value MXN 1,000 each. Comarch S.A. holds 495 of shares, i.e. 99% of shares and votes in Comarch Mexico S.A. de C.V., while CA Consulting S.A. holds 5 of shares, i.e. 1% of shares and votes in the company.
- On the 2<sup>nd</sup> of July, 2018, the Extraordinary General Meeting of Comarch Japan KK has adopted a resolution about the increase of the share capital by JPY 10,000 thousand, i.e. from JPY 5,000 thousand to JPY 15,000 thousand. Comarch UK acquired in its entirety a new share issue, i.e. 200 shares with a nominal value of JPY 50,000. Until the date of publication of this report, the above capital increase has not been registered.
- On 23<sup>rd</sup> of August, 2018 has been registered the capital increase in Comarch Colombia S.A.S. in amount COP 3,010,063,000 i.e. from COP 182,000,000 to 3,192,063,000. The increase took place due to the conversion of commitments from Comarch Software Spain S.L.U., which has 100% of shares. The amount of the target capital of the company is COP 3,600,000,000.00 and consists of 3 600 000 shares with a nominal value COP 1,000 each.
- On 11<sup>th</sup> of September, 2018 was registered a subsidiary Comarch Yuhan Hoesa (Comarch Ltd.) with headquarter in Seoul in South Korea. The share capital of the company amounts to KRW 100 million and consists of 10 000 shares with value of KRW 10,000 each. Comarch S.A. owns 10,000 shares, i.e. 100% in share capital and votes of company Comarch Yuhan Hoesa (Comarch Ltd.).
- In October 2018, Comarch (Thailand) Limited commenced its operations. The owners of 100% shares in the company were originally three natural persons who are members of the management board of Comarch S.A. On 14<sup>th</sup> of December, 2018, a contract for the purchase of shares in Comarch (Thailand) Limited by the following companies was signed: Comarch SA, CA Consulting SA, Comarch Technologies Sp. z o.o. The shares were paid up and this change was legally registered in Thailand on December 24, 2018. The share capital of the company is THB 8,000,000, THB 100 per share.
- On the 23<sup>rd</sup> of November, 2018 was registered a subsidiary Comarch BV with headquarter in Rotterdam. The share capital of the company amounts to EUR 100,000 and consists of 100 000 shares with value of EUR 1 each. Comarch S.A. owns 100% in share capital and votes of the company Comarch BV.

# 05

## Research and Development Work

# Research and development work

Globalization of the world economy and liberalization of trade result in the disappearance of barriers for companies and their products. The IT market becomes an open and global market where prices and the quality of available products are continuously compared against each other. Along with an increase in the presence of foreign capital in Poland, even IT companies conducting operations solely in the Polish market must offer competitive products from the point of view of the global market. Comarch, since the very beginning of its operations, has had a reputation as a technological Company developing and successfully selling competitive products internationally. Therefore, the main strategic objectives of the Company are still the development of new competitive products to enable further development of Comarch and, as a result, increasing its value. Maintaining dynamics of sales requires expenditure on the development of products as

well as their proper promotion and marketing. This applies to modifications of already existing products and technologies, and to newly developed products.

Comarch's current policy assumes running research and development work related to implementation of new products and the standardization of products from the very beginning of their preparation for the client. Thus, even in cases when a product was developed for the needs of a particular client, part or all of the software/code may then be then used for preparation of a standard product. This results in higher profitability of particular contracts and expansion of the client base. Expenses for research and development works amounted to PLN 181.2 million, or 13.2% of revenue in 2018. Comarch allocated their internal funds, and actively sought European funding.

## Subsidizing projects

### COMARCH SA

In 2017, as part of Measure 1.1 of the **Intelligent Development Operational Program 2014-2020** co-financed by the European Regional Development Fund, a contract was signed for co-financing the project "Production of technology" IoT Mesh "and supporting tools".

The "Healthy City" Project was also implementation under Priority 1.1. Support for R&D Activities of Enterprises", Sub-priority 1.1.2 „R&D Work Related to Manufacturing a Pilot/Demonstration Installation”.



UNIA EUROPEJSKA  
EUROPEJSKI FUNDUSZ  
ROZWOJU REGIONALNEGO



Under the **Horizon 2020** Program, a contract for financing the "LIVING INNOVATION - Implementing RRI through co-creation of smart futures with industry and citizens" - LIV.IN. project has been signed.

### COMARCH HEALTHCARE SA

In 2018, a contract was signed for the co-financing of the project "SOS for LFS - implementation of modern medical telecare for the inhabitants of the Łódź Metropolitan Area" from the European Social Fund under the **Regional Operational Program of the Łódź Region** for the years 2014-2020.

As part of the Strategic program of scientific research and development "Prevention and treatment of civilization diseases" - STRATEGMED II, the contract for financing the project "Non-invasive monitoring for early detection of atrial fibrillation (AF)" - NOMED-AF was continued.





# R&D activities in the Telecommunications Division

## BUSINESS SUPPORT SYSTEMS

In BSS (business support systems), used to support the business operations run by telecommunications service providers in their direct interaction with end customers, the largest sums have been invested to develop our own proprietary solutions in the following areas:

- Further development of the capabilities of direct sales channels (i.e. the Digital Sales website, the iOS and Android dedicated mobile applications (in line with the Mobile First approach), as well as social media – in an orchestrated manner consistent with the omnichannel concept
- New presentation of digital invoices (Digital Invoice), complete with a quick cost analysis functionality, accessible via all channels; system configuration templates allowing a client to quickly and repeatedly initiate a specific solution in line with best practice (for new clients)
- New modules for solution and process management, dedicated to back-office teams, made available from the web browser level
- Further development of an API in accordance with market standards (e.g. an Open API) to shorten implementation times and make Comarch solutions better able to integrate with third-party software components
- Improving the efficiency and flexibility of external incident handling by the IoT Connect platform,

to enable the feeding of embedded analytics, including with any data from Internet of Things devices, recording this information, analyzing it in real time, and responding both reactively and proactively (thanks to built-in artificial intelligence) to specific incidents

- Broadening the IoT service range to support new business models
- Expanding the IoT Connect capabilities to manage any devices, monitor their position (Asset Tracking) and service quality (QoS), and to manage their embedded software (Device Management)
- Supporting the latest technologies and market standards with respect to service provision, including extensions of VoLTE, Sy standard, customer package sharing (SME/Household Closed User Group (CUG) service)

At the same time, we have been working on major architecture changes to further improve the efficiency and scalability of various solutions, with a view to preparing for service provision within certain new business models (including through various subscription models dedicated to smaller operators), necessary from the point of view of technologies used along the way to transfer such solutions to the Comarch Cloud.

## INTEGRATED ASSURANCE & ANALYTICS

With respect to Assurance & Analytics category systems, which ensure the highest possible quality of service through automated management within the network, Comarch is also planning to work on developing some functionalities of key importance for its market.

One of them consists of in the use of machine learning algorithms in system failure detection, through the

creation of so-called “situations”, i.e. groupings of alerts that show certain similarities as to the time of alert generation, its location or scope of vocabulary describing an incident, as well as evaluation of the criticality of a generated situation based on historical data concerning the operator's past response to such alerts. The scenario simulation would be carried out using real-time data processing technologies such as Spark Streaming and HBase.

## OPERATIONS SUPPORT SYSTEMS (OSS)

The objective of our research and development work in networking systems is to transform OSS into a comprehensive tool that can manage a hybrid network, with a growing role for the NFV/SDN domain (software-controlled virtualized network management). The purpose is to show the benefits

of maximum automation of network management, including cost reduction and the possibility of offering new types of services to the operator's end customers, as well as shortening the implementation times for new services and technologies.

An enhanced OSS system would be capable of managing a virtualized and non-virtualized network (or a hybrid network combining both types) based on similar rules with respect to network planning, passporting, configuration and quality assurance. Comarch's OSS would also be helpful in service creation and orchestration, as well as efficient allocation of hardware resources.

Another important project is the Comarch Smart SON (Self-Organizing Network) solution. Comarch has been investing in the project for the past

three years, as a result of which the Comarch OSS Suite is now capable of supporting self-organizing networks as all OSS products have been integrated into a single Head software version. Our objective here is to have our own product (without the need to rely on any suppliers) for radio neighbor and parameter optimization. The SON solution, open to future improvements (i.e. new networking functions, 5G, etc.), would provide short-term benefits to communication service providers (CSPs), allowing them to transfer repetitive operations performed by network engineers to the Comarch SON tool.

## FIELD SERVICE MANAGEMENT SYSTEM

Comarch is planning to develop its field service management system by adding a functionality based on available augmented reality solutions. To this end, a demo version of the Microsoft HoloLens application is being developed, designed to support technical staff in their work by allowing them to interact with instructions and information available in the form of holograms.

With this solution, Comarch would be able to offer its clients a tool to expedite work on their customers' premises thanks to easily accessible digital content. The input information would support the process of task execution, allowing them to assign tasks to less experienced staff and increasing the chances of a successful repair job on the first visit (first-time fix rates).

Currently, Work to adapt the system to operation in the cloud environment is also currently underway. This will enable us to increase the implementation rate. Another project we have been pursuing to broaden the range of possible Comarch FSM applications aims at developing a predictive maintenance module that relies on machine learning technology to predict equipment issues, enabling customers to avoid costly future repairs.

We have also been engaged in work on an additional customer portal module via which end users would be able to monitor their order execution statuses and communicate with service providers. This solution will enable our FSM software users to offer improved service quality to their customers.

## R&D activities in the Financial Services Division

The projects our **R&D department** engages in are mostly related to AI. The department focuses on the application of deep machine learning methodologies to the financial industry, including such key solutions for capital markets as AML.

Other concept applications of AI in finance, as explored by the department are: underwriting (automatic collection of data which is usually collected by an employee of an insurance company in order to

calculate the premium), claims adjustment (teaching a neural network to automatically evaluate a given motor claim on the basis of a salvage vehicle picture sent over by the driver), or cash flow management (allowing a company to estimate the amount of cash that it will have at hand at any one time).

One of priorities here is Explainable AI (XAI) which not only helps estimate what may happen, but also says - why.



# Research and development activities in the Services Division

## CRM&MARKETING

As part of the research and development work for the Customer Relationship Management (CRM) product group, all systems have been updated to make them fully compliant with the new EU regulations on personal data protection (GDPR).

What is more, the team is currently making modifications to the architecture to make it possible to host a system (PaaS model) in our data center. We are also working on an AI-based module that allows users to analyze customer behavior and design offers that match their clients' personalities.

## E-INVOICING

Three main research and development projects are carried out for the Comarch E-Invoicing product group. First of all, the integration of EDI and MDM-class solutions ensures a significant improvement in the quality of transaction data (e.g. orders or invoices) listed in the cloud. The next task is to create a global solution for mass e-invoicing projects that ensures compliance with local legal conditions and to support deceased customer processes, including acceptance of invoices using Machine Learning technology. Finally, we will automate the integrated portfolio to handle all processes in the supply chain with central reporting and Big Data analysis - from the multi-channel sales process, through the process of product data exchange,

Additionally, we are developing a cutting-edge Chatbot module that can answer questions asked by our clients and that are currently addressed by the agents from our Contact Center. Plus, we are working on integrating the CLM mobile application with selected, global payment providers (f.ex. Stripe) as well as detecting loyalty frauds with the use of AI algorithms.

Comarch Location-Based Services – a modern platform that allows you to collect data from Comarch beacons in order to present clients with personalized offers at the right time and place – has also been developed.

ordering, delivery and receipt of goods (also through logistics operators), to the fact of payment.

As part of the e-Invoicing solution, the functional scope is adjusted to ensure the provision of services in an increasing number of countries in accordance with the applicable regulations. Work includes adaptation to B2B and B2G exchanges.

Development work also include the integration of electronic communication in the traditional and modern channels, providing comprehensive and reliable sales data.

## INFORMATION AND COMMUNICATION TECHNOLOGIES

As part of the R&D activities implemented for the ICT product group, we managed to build and run the solution of the Comarch Cloud Infraspaces private cloud in the CDC center in Kraków. The functional scope of the solution can be divided into Infrastructure as a Service (IaaS) and Platform as a Service (PaaS). It also consists of three layers: hardware (based on x86, SDS - software-defined storage and omni-path 100Gbe network),

application (to share available resources, based on the software to build an opencast cloud solution OpenStack - IaaS) and container (for building applications based on micro-services, implemented by the Kubernetes software - PaaS). The next step will be expanding the platform with new functionalities, as well as launching platforms in data centers in Lille, Dresden and Chicago.

# Research and Development Activities in the E-Health Division

The e-Health sector provides comprehensive solutions for the medical industry. It runs numerous research and development (R&D) projects aimed at creating innovative technologies for, among others, medical facility management, and electronic health record and remote patient monitoring (using telemedicine solutions). A part of the sector is the iMed24 Medical

Center, which is a natural environment for the development of IT products for medicine.

The e-Health sector, as a leading provider of solutions in the field of remote medical care in Poland, undertakes many initiatives to popularize and increase the availability of telemedicine.

## "THE HEALTH CITY" PROJECT

Comarch specialists have developed an innovative solution, delivered to local governments. It enables the implementation of healthcare services and prophylaxis for residents, especially in cardiology, obstetrics and senior care. Pilot projects under

"The Health City" program have been run in Łódź, Zabrze, Suwałki, Płock, Brzeg, and others. More than 3 000 patients have already used remote services within the pilot projects in Poland.

## "NOMED-AF" PROJECT

The aim of the project is to develop a system for the detection of silent atrial fibrillation (AF) in the group of patients aged 65+, obtaining data on the frequency of AF occurrence and risk factors for arrhythmia within this group. The key goal is to provide data to research centers, to develop new treatments for AF, and to productize and raise awareness of the solution.

The clinical trial was performed among a group of 3 100 patients. R&D work within this project includes:

- Unique vest for long-term ECG recording
- ECG recorder with a transmission and docking station, and associated software solutions
- NOMED platform to support clinical examination and ECG assessment by doctors
- Comarch Medical Analysis Platform (CMAP) has also been expanded.

## COMARCH E-CARE PLATFORM

One of the company's products is Comarch e-Care, a telemedicine platform that allows continuous remote monitoring of patients' health. It is used in various specialties, including cardiology, obstetrics, pulmonology and senior care. The research and development work is aimed at extending the platform, from the alarm system to the comprehensive service system, offering short-term and long-term monitoring, test management, reporting, process automation,

and more. We currently have more knowledge about services on the telemedicine market, which resulted in work related to the reconstruction of the graphical interface and the method of service management. The changes introduced will enable the service of many more patients (achieving economies of scale and cost optimization). An additional factor that allows obtaining the expected effect is the support of continuously developed algorithms.

## COMARCH MEDICAL ANALYSIS PLATFORM (CMAP)

An important element of the e-health ecosystem is Comarch Medical Analysis Platform, which receives ECG test records. The implemented algorithms carry out advanced ECG analysis, automatically detecting the most serious disorders, enabling an earlier reaction to detected disturbances. The solution significantly shortens the time of long-term ECG monitoring, and performs full verification of the recording without manual processing of the signal. Comarch Medical

Analysis Platform uses algorithms that allow early detection of, among other things, tachycardia, bradycardia, cardiac arrest and atrial fibrillation.

In 2018, there was a major development of algorithms based on deep learning. This paved the way to more effective recognition of disorders and improved the analysis of test results.

**In terms of algorithms, research and development work includes, among others:**

- Gathering and processing signals collected by ECG recorders, in order to verify and teach algorithms
- Preparation of machine learning algorithms for recognition of atrial fibrillation in the ECG signal
- Preparation of algorithms to assess the quality of the ECG signal
- Preparation of algorithms for classification of morphological types of beats in the ECG signal
- Development of machine learning algorithms for diagnosing disorders in the ECG signal, with particular attention to arrhythmias (atrial fibrillation, conduction blocks, and tachycardia). The results of the work will be used in the Comarch CardioVest system for long-term ECG monitoring

- Preparation of an expert system supporting the prediction of potential problems based on the information collected in the Electronic Health Records database.

**In terms of software, research and development work includes, among others:**

- Further development of Comarch Medical Analysis Platform – a uniform computational cluster using ECG and CTG analysis algorithms
- Finalizing the work on Comarch Holter
- Further development of Comarch CardioVest
- Preparation of a uniform platform for remote monitoring based on sets of complementary tests

## DEVICES

In terms of devices, research and development work includes, among others:

- Further development of Comarch's "smart-watch" wristband for remote monitoring of elderly or disabled people,
- Continuing work on the new version of the PMA (Personal Medical Assistant – remote monitoring for patients with cardiovascular problems)
- Continuing work on the new mPMA device (Mobile Personal Medical Assistant), enabling long-term cardiac monitoring and event ECG
- Further work on the new version of Comarch CardioVest
- Improvement and development of Comarch Diagnostic Points

# R&D activities in the Technology Division

Comarch Technologies focuses on intense research and development (R&D) in the field of the Internet of Things (IoT). More than 50% of the 140-member team work on R&D projects. What distinguishes this Comarch sector is the development of both software and hardware solutions, not only for its own needs, but also for other units. The devices and technological solutions that are created enable the extension of other business units' product functionalities.

Comarch Technologies business unit creates its own communications modules and IoT devices, as well as medical devices. The strategy is to produce HW and SW blocks, which will enable the provision of IoT solutions. It is a kind of synergy of specialization and competencies, which results in innovative solutions.

## Directions of development within the scope of IoT products – R&D programs:

- The **Comarch IoT Platform Project** is a cloud solution enabling implementations of diversified IoT applications. Within the project frameworks, elements facilitating such solutions as Comarch Smart Lighting and Comarch Smart Manufacturing are created and developed.
- **IoT devices** are also part of this project. R&D work concerns such products as Comarch IoT Hub – IoT Gateway, Comarch Beacon/Beacon Industrial, Comarch Communications modules (2.4 GHz MESH, BLE, 3G/4G, NB-IoT, LoRa, SigFox), Comarch Smart Lighting modules (smart lighting controllers) and Comarch Bracelet (BLE/NFC bracelets).
- The **IoT MESH Project** concerns the testing and development of comprehensive connectivity technology consisting not only of an effective communication module and a protocol based on the MESH technology, resistant to interference and optimized for applications in the IoT, but also of a set of tools to create and manage a smart IoT network. Research is performed with strong emphasis on optimization and cyber-security.

- The **IOT PLANT Project** constitutes an IoT R&D laboratory, where R&D activities are carried out on a very wide scale, including the prototyping of EMS electronic devices (in the areas of industrial design, electronic design, software development, mechanical prototyping, vacuum casting with the application of 3D SLA laser printing technology, and CNC milling), from their production (selective application of protective coatings and environmental tests), assembly and post-production quality control.
- The **NB-IoT Project** focuses on applying the most recent NB-IoT telecom technology based on a modified 3GPP LTE (4G) specification for applications in the IoT, with particular regard to battery-powered devices.

Under the project, a communication module is being developed and tested, and the possibilities of applying and implementing it in IoT solutions are being examined on the basis of an operator's infrastructure.

The rate of standardization of this technology by 3GPP confirms the demand for its commercial implementation. That is why work is characterized by a wide range of applications, aimed at creating innovative IoT products long before 5G technology becomes a commercial reality.

In addition, research is being conducted into extending the portfolio of Smart Hospital services, in order to make Comarch Healthcare services more attractive. Work is also underway on entering the new smart metering segment, by means of which utility consumption can be measured. Solutions of this kind enable the acquisition of more information than in case of a conventional meter, and data can be sent and received electronically. Research on system functionalities is aimed at enabling the reduction of operating expenditures, increasing efficiencies, and shortening the time taken to deliver new services to customers via the platforms.

## R&D activities in the Public Division

The research and development projects of the APUS division mainly concern the development of products supporting the Smart City concept.

An example here may be the work on Intelligent Video Analytics (IVA), which are developed in principle in two key areas for cities: security and transport. The focus of this work includes, among other things, analytics for recognizing and categorizing objects, which may find application in traffic assessments such as identification of free parking places, automatic incident detection for security purposes, and facial recognition. The work has led to the creation of the Comarch Smart Parking Platform and Comarch Security Platform, both part of the Smart City solutions.

As part of the development program, investments were made to expand the functionality of the Comarch ERGO software, which is an integrated IT platform for

the spatial economy of self-governments. Unique in Poland, it is a system for the integrated management of more than 60 public spatial management registers. This system can work as an electronic platform for a shared service center of many public administration units. The main directions of R&D work were focused on the development of the Comarch ERGO platform in public cloud technology in the SaaS model, as well as in the private cloud model for public administration. Research and development work is also underway regarding the preparation of Comarch ERGO software modules in the hybrid cloud model, which will allow customers to integrate their functionalities flexibly. Both modules may be installed on customers' own equipment on their premises, or provided as part of cloud services.

## R&D activities in the ERP Division

Comarch Business Intelligence supports enterprises in developing their data-based strategies by providing in-depth analyses of large data sets, including big data, and delivers, for instance, a detailed picture of a financial condition, procurement schemes, basket analyses, effectiveness of marketing campaigns, and statistics related to operations of enterprises. With each version, the solution offers more possibilities in the area of advanced analytics in the form of deep learning, machine learning or artificial intelligence that make the solutions more pro-active and suggest data-relying actions, and provide predictive analyses.

Mining Process – Comarch Business Intelligence uses Knowledge Database Discovery processes also to optimize interfaces of other Comarch systems on the basis of an analysis of user behavior in applications. It helps in understanding of our customers and, in effect, in personalising interfaces for user groups and their needs.

Additionally, R&D is carried out to implement machine learning in ERP systems; examples of such processes are:

- Delivery of data sets logged from most frequent processes carried out in ERP
- Attempts at drawing conclusions about user behavior from the data on user behaviour
- Designing changes to ERP to suit the conclusions obtained from research

Within machine learning, work is also under way to increase the system performance by adapting, for instance, database indexation to processes most frequently used in the enterprise. Comarch ERP will be able to become adapted to the way the users in an enterprise use it and effectively adjust the database structure to generate best possible results.

Another direction of work related to intelligent operation of the software is to develop a number of functions in ERP systems to improve work automation in the system on the basis of expert knowledge (to be used in the smart expert application). The ERP solution has been provided with an intelligent system of saving and using printouts related to each counterparty. As a result, the system prompts the most suitable printout for each document and counter-party.

An additional area of R&D activities in AI is to develop virtual assistants/chatbots/Chatbots. Including:

- Assisting customers in application use
- Communication interfaces relying on chatbots

Within R&D work continuing with respect to all SME sector products, system integration is performed with the free database PostgreSQL. Extended cooperation based on an open source database engine will help our customers to avoid additional costs.

Blockchain is another important element of the R&D work. We are currently working on recognizing and finding adequate locations inside ERP systems that will be used to implement the technology. The Blockchain idea relies on simplifying transaction flows between entities. With respect to ERP systems, potential applications provide for automated payments for commercial documents issued within ERP.

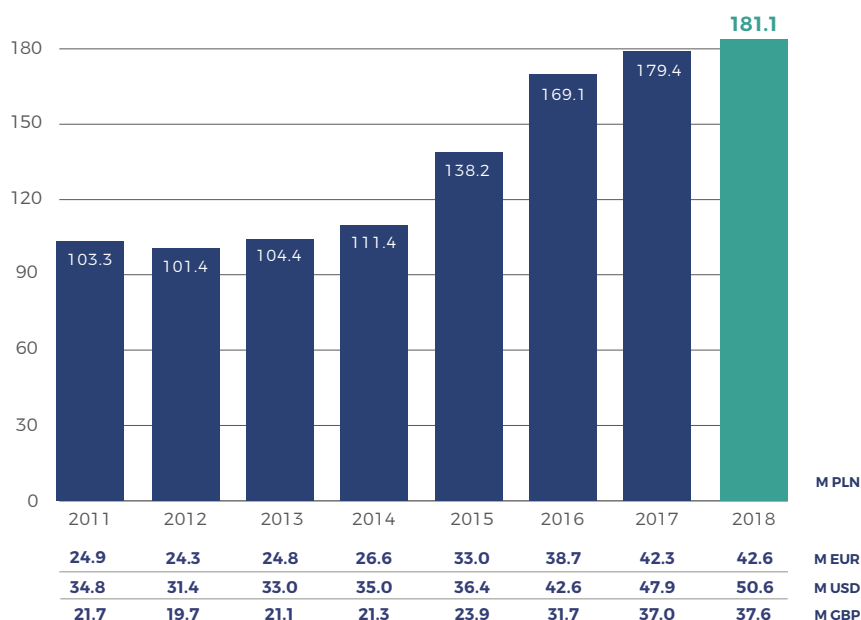
Work is also underway to recognize and apply the technology of micro-services in the production of

ERP class software. The application of micro services supporting the relevant processes will support easy and effective scaling of the system for each customer. Work will be carried out on the basis of Comarch XaaS.

Work is underway way on developing possibilities to have recommendations generated by the system on the basis of a history of completed production orders, for instance, in a situation when in the last 10 production orders it is always 4kg and not 6kg of the product that is used, or the operation lasts two instead of three hours – the system will propose a modification to technological standards. The recommended changes will be subject to approval by the operator, which will result in an update or development of a new version of the technology.

R&D also covers verifications of the potential to use smartwatch devices to display most sensitive information, for example, coming from DMS. In such cases, the user will be able to use a smartwatch to approve steps in workflow.

## Research and development expenditure of Comarch Capital Group







# 06

## Comarch Products

# Products and services offered by Comarch in 2018

Comarch is a producer of innovative IT systems for key sectors of the economy, such as telecommunications, finance and banking, public administration, as well as large, small and medium-sized companies. A wide range of the Comarch offer includes ERP-class and financial and accounting systems, CRM systems and loyalty software, sales support, electronic document exchange, electronic banking, BSS/OSS systems for

telecoms, M2M/IoT solutions, business intelligence, security and protection of data and many other solutions. Apart from providing innovative IT solutions to its customers, Comarch is focused on professional customer service and on providing consulting, advisory and integration services as a uniform package, with which our customers can take full advantage of the possibilities offered by modern IT systems.





MORE THAN  
**50**  
TELECOM COMPANIES WORLDWIDE  
ARE USING COMARCH BSS/OSS



**90 000 REPORTS**  
GENERATED MONTHLY BY PERFORMANCE MANAGEMENT,  
IN LESS THAN ONE MINUTE (ON AVERAGE)



IMPLEMENTATION OF THE WORLD'S FIRST ASSURANCE  
SYSTEM FOR THE 5G NETWORK



**300 TB** OF DATA  
PROCESSED DAILY IN THE  
OSS/BSS DATA ANALYTICS



COMARCH SYSTEMS ENRICHED WITH BUILT-IN ARTIFICIAL  
INTELLIGENCE MODULES USING MACHINE LEARNING  
ALGORITHMS

# Telecommunications Division

Comarch's specialist telecoms division designs, implements and integrates IT products for telecoms companies including Telefónica, Deutsche Telekom, Vodafone, KPN and Orange. Our software helps telcos across the globe transform their operations in order to increase revenue, raise business efficiency, simplify systems, cut costs, enhance customer experience and build new services with shorter times to market. Our OSS and BSS products have been consistently listed in on Gartner's Magic Quadrant. We have also been recognized for our work in the telecoms industry by other analysts including Forrester, Informa and Frost & Sullivan.

## IOT CONNECT

**IoT Connectivity Management** enables mobile operators to provide managed connectivity in multi-national, multi-level and multi-operator environments. The system is an M2M/IoT connectivity management platform that helps launch IoT offers for vertical industries such as automotive, consumer electronics, retail, energy & utilities, finance & banking, healthcare, manufacturing, public services, security, and transport & logistics.

**IoT Analytics Platform** module focuses on delivering measurable business value, using intelligent big data processing and real-time data analytics for M2M/IoT business purposes. It provides thorough information about the way in which customers are using your IoT products. Additionally, it handles some issues related to quality of service (QoS) within operations, by helping discover which

device (or type of device) generates issues, revealing data patterns and trends, and providing reports and analyses of anomalies.

**IoT Billing** is tailored to the needs of your IoT operations. It enables charging not only for connectivity, but also for IoT devices, vertical applications and bundled services. IoT customers are looking for the best-suited offer answering their businesses in the most appropriate way. The system supports all kinds of multi-level business relations (B2B, B2B2C, B2B2B).

**IoT Solution Management** helps businesses function in today's IT world. It includes comprehensive support for selling, storing and managing IoT connectivity services, devices and applications.

## ENHANCING DIGITAL CUSTOMER JOURNEYS

**Real-time Data Control & Presentation** calculates service charges, controlling buckets, balances, and limits in real time. The module improves customers' digital experience by providing readable and easily digestible visual cues, giving a clear view of current bundle consumption, data usage, balances and limits. It is also the source of data for multi-dimensional reporting, 360-degree customer views, analytical actions, recommendations and personalization engines – all of which greatly impact the entirety of the customer journey.

**Digital Sales and Customer Care** enables you to introduce, recommend, sell and maintain both traditional telco and digital services with the speed and simplicity required by today's market. Customers are guided through digital shopping and buying process which includes offer browsing and comparison, online availability check, customer onboarding, omnichannel shopping cart and checkout out process.

## DIGITIZING ENTERPRISE CUSTOMERS

**Enterprise Billing, Charging & Revenue Management** is a telecom invoicing software that addresses the needs of even the most complex corporate environments by providing features such as multi-branch and multi-department organizational structure support, split billing with flexible definition

of rules based on time of connection or service type, ad hoc reporting of data with current buckets consumption, charging based on thresholds, shared bundles at the level of company or branch, closed user groups, availability of usage data and financial data in the middle of the cycle.

## Comarch Telecom Digital B2B Platform

lets CSPs provide enterprises with offers across all telco services, including mobile and fixed voice, data and VPN. These services can be bundled with unified communication, security and cloud systems in a single Product Catalog that drives all order management processes in a manner that satisfies the needs of modern enterprises and lets CSPs introduce new services seamlessly.

## PROVIDING ENTERPRISE SERVICES GLOBALLY

**Enterprise Product Catalog** enables simple and flexible storage of the entire CSP product portfolio in one place. The system sets up several slave catalogs per domain or business line. These are used for selling offers to end customers and driving appropriate charging and billing systems.

**Digital Billing and Revenue Management** delivers multi-currency and multi-taxation handling as well as generation of financial documents not only for customers, but also for partners involved in the entire process of service delivery.

**Partner Management** provides flexibility in liaising between enterprises and various third parties by allowing the modeling of any type of service from SLAs and offers up to central Product Catalog. The system is secure and easy to deploy,

**B2B Sales & Ordering** – this proven tool provides a full lead to cash experience within a single package. It ensures accurate, automatic and near-instant quotes which, thanks to the product catalog-driven mechanism, become agreements seamlessly upon approval.

with multi-currency, multi-tenancy and multi-national support.

**Wholesale Billing** allows service and content providers to exchange billing data and invoices, and share revenue or cost information with partners. The product facilitates the management of relations with domestic and international business partners, and supports various business models which include revenue sharing, wholesale and roaming services. The easily scalable product is fully prepared to support the newest services and is open to business evolution. Comarch Wholesale Billing processes high volumes of any kind of services (voice, data, messaging, content and others) within any kind of agreement, including bilateral, hubbing, revenue sharing, roaming, MVNO and content-based.

## 5G NETWORK OPERATIONS

**Zero-touch Network Provisioning** – a product to IoT and 5G demands for rapid, automatic implementation of telecom network elements. The system allows devices to be connected, pre-configured and updated.

**Comarch Self-Organizing Network (SON)** is a system that enable the automation of network failure management and optimization of network processes, thus operators may not only reduce OPEX, but also shorten the time to market for new technologies and network services.

## Real-Time OSS – SDN/NFV Orchestration

is a platform for provisioning and managing services over VNFs, PNFs and SDN-controlled networks, facilitating comprehensive orchestration of complex multi-domain topologies.

**Service & Resource Orchestration** is a product which aims to help CSPs to transform service and network management into a much more automated system, shifting to the idea of zero-touch network and service management. Orchestration aims to automate not just the fulfillment area, but all processes related to the complete service and resource lifecycle.

## INTELLIGENT ASSURANCE & ANALYTICS

**Customer Experience Management (CEM)** plays an overarching role in service monitoring and service quality management, transforming service management by providing an insight into customers' perceptions of services provided by

telecoms operators. It helps network providers make the leap from network/resource-centric operations to customer-focused ones, delivering effective telecom customer experience management tools.

**OSS Service Desk (OSSSD)** is a comprehensive system supporting engineers working in operations centers and handling situations with the potential to impact subscribers and, subsequently, the company's revenue stream. This indispensable tool supports network and service operators, allowing them to resolve incidents swiftly in accordance with specific SLAs. It facilitates efficient root-cause analysis of reported problems and aids wise planning of changes in the network to minimize the impact on customers and business agreements.

**Integrated Assurance** brings pro-activeness and significant reduction of mean time to repair (MTTR) due to automation enabled by close integration of traditionally stand-alone applications such as fault

management, service problem management, resource & service test management, resource & service performance management, service quality management, and service assurance control, as defined by eTAM.

**BSS/OSS Data Analytics** – with its big data analytics for telecom operators, the product processes data from the network in real time, combines this information with that from external systems, and aggregates it. Comarch BSS/OSS Data Analytics effectively helps telecoms companies improve their overall net promoter score (NPS) and customer satisfaction (CSAT) result, as it takes into account the real customer experience when using a given service provided by the network.

## RESOURCE MANAGEMENT

**Real-time Network Inventory Management** stores complete information about physical, logical and virtual network resources. It is a shared, central fixed-access inventory to capture all details of a very complex IT/telecom environment with advanced micro-services technology underneath.

**Network Planning & Design** enables CSPs to manage telecom network planning, design and optimization processes comprehensively and efficiently. Process-orchestrated planning is a future-proof way of making network investments, where the business value of the investment becomes ever more important in re-sponse to developing telecom opportunities.

**Network Auto-discovery & Reconciliation** provides a complete, comprehensive and up to date insight into the multi-vendor, multi-domain network, enabling effective network management. The system supports reconciliation of RAN, transport, core, access and IT domains, and thanks to integration with Network Inventory provides one, comprehensive and integrated view of the live state of the network.

**Configuration Management** enables service providers to automate network provisioning for all network domains. It is a product that manages configuration in a manner that goes beyond the traditional radio access network (RAN) approach, implementing network provisioning in the transmission, core and access domains too.

**Comarch Network Consolidation for M&A** helps telecoms efficiently organize and streamline network planning and consolidation process-es in merger and acquisition (M&A) projects. The product is built of various components from Comarch's next generation OSS portfolio. The core modules of the system include Resource & Network Inventory, Planning Framework (with Radio, Transport and Core technology packs), Geographical Information System (GIS), Mediation, Reporting, and Business Process Management. The Pairing and Rating engine, used for automatic benchmarking and site selection, has been developed specifically for this product and extends the capabilities of network inventory planning.

## SERVICE DESIGN & FULFILLMENT

**Service Fulfillment & Orchestration** is a product designed to reduce time to market and automate the telecom service fulfillment process for customer service delivery on top of a hybrid network. The system employs the model-driven (catalog-driven) concept, which enables the orchestration of hybrid networks where virtual network functions and network services are modeled consistently, with physical network functions and legacy network

services employing the TMF SID model. SFO (using ETSI NFV ISG terminology) can implement end to end service and MANO orchestration, and manage the VNF instantiation process.

**Comarch Field Service Management (FSM)** is a comprehensive workforce management system for scheduling, staffing, managing, and supporting the workforce in the field, which results

in significantly increased efficiency of operations. Thanks to this tool, customer and network operations can utilize the available resources more efficiently and improve the team's coordination. The system selects the most suitable resources for each task, considering all aspects and bearing in mind KPIs according to the company's business model. Comarch FSM addresses the needs of field workforce managers, allowing them to manage resources, tasks, time and knowledge effortlessly. Full mobility support for all on-site activities allows the time needed for task execution to be shortened, work quality to be improved, and changes to be performed in real time.

## PROFESSIONAL SERVICES

**Business consulting** is a service that helps telecoms optimize and automate their business processes and increase their efficiency in OSS and BSS areas, by eliminating multi-vendor and cross-organization redundancy and by rethinking IT architectures and configurations.

**Managed Services** offer telecom operators the opportunity to outsource system and/or process management, enabling them to optimize the delivery of services to customers and increase their availability, while decreasing the workload and business costs without compromising process quality or business/technology independence.

**BSS/OSS Transformation** as a software vendor and a business partner for global telecoms companies we understand the nature and complexity of telecom transformation projects. Based on our experience

**Comarch Service Inventory** facilitates the end to end management of your network and all related products from the service perspective. It is a product that can be pre-integrated with the Comarch Service Catalog system, in a manner that enables you to fully describe the services and products offered via your network. In this way, Comarch Telecom Service Inventory acts in accordance not only with the TMF SID (addressing customer-facing services (CFS)) model, but also with the resource facing services (RFS) one.

we have developed a complete offer of products and services to support local and multi-country transformation projects in OSS and BSS domains.

**End to End Project Delivery** adds extra value on top of delivering a system to a customer, and encompasses the following services: requirement analysis and system design, training, implementation and integration, as well as maintenance and support.

**BSS/OSS Cloud Transformation** is one of the fundamentals of digital reinvention that telecoms are going through. It is designed in the spirit of agile, microservice-based architecture that ensures full automation of platform integration and delivery, rapid deployment, and cloud-readiness from the start.





MORE THAN  
**100**  
SATISFIED CLIENTS IN  
THE FINANCE SECTOR



OVER  
**200**  
BUSINESS PROCESSES DEFINED IN THE COMARCH  
LOAN ORIGINATION SYSTEM



OVER  
**18 YEARS**  
OF EXPERIENCE IN IMPLEMENTING CREDIT SYSTEMS



MORE THAN  
**50**  
ENTITIES MANAGING ASSETS  
ALL AROUND THE WORLD



MORE THAN  
**2.5 MILLION**  
OPERATIONS ON SECURITIES  
PROCESSING ANNUALLY



# Financial Services Division

specializes in developing sophisticated software and IT systems for major financial institutions in banking, insurance and capital markets. We help enterprises and institutions increase customer satisfaction by creating and implementing state-of-the-art IT solutions and services encapsulating over 20 years of experience. Our portfolio of satisfied clients includes financial institutions in more than 30 countries, including Raiffeisen, ING, TMB Bank, Alior Bank, Pekao, AXA, Allianz, UniCredit.

## PRODUCTS

**Comarch Corporate Banking** is an omnichannel platform designed for the specific needs of large and medium-sized companies, and offered to banks providing services to such companies. It's a transactional banking system, a financial management tool, and a solution to facilitate handling of bulk payments – all rolled up into one. It also supports corporates in managing accounts of different types, buying currencies, making local and international payments, or consolidating balances across the world.

**Comarch Wealth Management** is an integrated, multi-module platform dedicated to retail, affluent and private banking client segments. The system supports different recipients: relationship managers – in advisory and financial planning processes, end-clients – in self-driven robo-advisory processes, and bank-client communication with the use of newest technologies, wealth managers – in discretionary portfolio management in line with regulations and investment mandates, and analysts – in running performance and risk calculations to assess client portfolio efficiency.

**Comarch Digital Insurance** is, on one hand, a system designed for insurance agents, brokers and intermediaries. It helps them not only advise on and sell insurance products but also provide post-sales support, manage their tasks and monitor their own business performance. On the other hand, Comarch Digital Insurance allows individual customers to smoothly purchase a policy online and manage their insurance product portfolio.

**Comarch Anti-money Laundering** allows banks to significantly decrease the time and increase the precision of transaction monitoring – a routine task requiring much knowledge and experience. The system takes the burden of performing routine

tasks off bankers' shoulders, reduces the total time it takes to analyze alerts, and lets bankers focus on more demanding and complex challenges.

**Comarch Identity and Access Management** is a solution that allows full control over access to a company's applications, VPNs and workstations. It comes with world-class methods for identity lifecycle, authentication, authorization and accountability. Its modular architecture makes it easy to adapt to specific types of organizations across hierarchies and geographies.

**Comarch tPro ECC** is an innovative USB token for digital signature. The token is driverless, OS-agnostic and browser-independent thanks to a connectivity mechanism that is unique in the market. Furthermore, the presence of a built-in button that the user has to press and release in order to authorize transactions makes tPro ECC an extremely effective device in countering remote attacks.

**Comarch tPro Mobile** is a mobile solution for strong customer authentication and transaction authorization based on two factors: what the user has – a mobile phone with an app; and what the user knows – a PIN or pattern. The application also supports biometry on mobile devices with a fingerprint scanner.

**Comarch Loan Origination** enables more efficient control of credit risk and allows a significant reduction of time needed to grant a loan. The system automates the work of client advisors managing the credit-granting process at its every stage. It allows banks to optimize the most vital elements of credit management: loan simulation, application verification, analysis of customer financial situation (including database checks), decision-making and fund disbursement. .



**27**

SUBMITTED AND REGISTERED  
WORLDWIDE TRADEMARKS

**PATENT**

THREE PATENT APPLICATIONS



OVER

**2 MILLION**

SUPPORTED TASKS PER HOUR  
WITH COMARCH PKI



OVER

**1 MILLION**

SUBMITTED PKI CERTIFICATE REQUESTS  
PER HOUR



OVER

**1 MILLION**

AUTHORIZED USERS IN COMARCH IDENTITY  
AND ACCESS MANAGER DRACO PER DAY



OVER

**10 THOUSAND**

USERS OF FSM PER DAY

# Technologies Division

Comarch Technologies is stable multi-service provider and fast-growing technology wing of Comarch Capital Group which is focused on the Internet of Things (IoT). Since 2004, we have been providing end to end solutions combining HW and SW distinguished by following the highest industry standards in safety and security. We deliver comprehensive solutions in the field of design and implementation of IT system and provide the customers with the most reliable and secure solutions that consist of advanced software along with innovative hardware infrastructure supported by professional services.

IoT expansion is paving the path for new business avenues which are used by Comarch Technologies. We offer services in the area of consumer electronics and R&D in the automotive sector, including the design of electronics, hardware prototyping and production, embedded software, certification and user experience analysis, focusing on communication and data interchangeability.

## PRODUCTS

### INTERNET OF THINGS

**Comarch IoT Platform** is a comprehensive cloud solution for monitoring and managing devices constituting the Internet of Things. It enables mutual communication between different kinds of equipment furnished with wireless communications modules. It operates as their aggregator and configurator, and is suitable for integration with systems such as Comarch ERP, Comarch LBS and Comarch FSM, as well as third-party systems. Benefits include automation and control over processes taking place in an enterprise, such as the reduction of electricity costs due to smart lighting solutions. It is well adapted to collect and analyze big data from devices connected to the Comarch IoT Platform. It offers our clients continuous growth of the efficiency of logistics processes, along with better management of equipment and materials.

**Comarch Beacon** is a device connecting the real and the virtual worlds. It uses Bluetooth Low Energy, thanks to which the device is simple and inexpensive yet offers huge possibilities. When it is installed it becomes a virtual lighthouse, enabling mobile applications to trigger a given action when a user enters a specific area. Such actions include sending contextual messages, establishing communication with a consultant, indicating the user's location in a building, and many others.

**Comarch IoT Smart Lighting** is an ecosystem based on the Comarch IoT Platform, which enables fast configuration and management of smart lighting in cities, public utility buildings and industrial premises. This solution employs the Comarch Smart Lighting module, which makes it possible to convert existing lighting infrastructure into smart systems.

**Comarch Smart Manufacturing** (Industry 4.0) is a solution based on the Comarch IoT Platform, which allows for quick configuration and management of intelligent lighting in the city, public buildings or in industry. The solution also uses a Smart Lighting module that allows you to transform your existing lighting infrastructure into an intelligent system.

**Comarch Asset Tracking** is a solution based on the Comarch IoT Platform, allowing you to locate devices, things inside buildings. The system from the hardware side is based on Comarch devices and radio modules.

**Comarch Smart Metering** is a solution dedicated to monitor critical infrastructure for utility companies (water, electricity, gas). The solution consist of dedicated HW gateway able to read the metering data using industry standards and transmits it wirelessly using LPWAN technology (4,5G) through telco operator networks (NB-IoT lub LTE-CatM) to the cloud.

**Comarch IoT Hub** is a mediator between the cloud and IoT devices equipped with wireless connectivity without direct access to the Internet. It enables the use of all popular communications standards, such as BLE and WiFi. Owing to its advanced structure, it facilitates limited remote control over connected devices, even if connection to the Internet is lost.

**Comarch Connected Car Solutions** is an ecosystem of services connecting cars with advanced technologies at the layer of communication between mobile devices and the car head unit.

## MOBILITY

**Application development** is a service offering the design of mobile applications tailored for individual customers, using Comarch's expertise and experience in different areas such as connectivity, infotainment systems and network security with great stress on user experience (UX).

**Quality control and tests** describes the comprehensive planning and management of the SW and mobile application testing process.

**Certifying tools** created in Comarch for the largest certification organizations in the automotive, communications and energy sectors (Car Connectivity Consortium, Open Connectivity Foundation and AirFuel Alliance) enables the effective management of the certification process relating to devices and applications. In addition, the process makes it possible to verify compliance with defined standards, and to issue certificates automatically.

## IoT PLANT – modern laboratory and production hall

Comarch IoT Plant offers high quality services for the fast prototyping and assembly of electronic devices (EMS). We provide our clients with comprehensive support at each stage of the manufacturing process, including design, mechanical prototyping, assembly and post-production quality control.

Our long-term experience, acquired within the frameworks of R&D activities and the manufacture of electronic devices, combined with the high professionalism of our engineers, allows us to deliver products and EMS services, and to design services of the highest quality, compliant with applicable standards and trends.



The laboratory/production hall at Comarch IoT Plant



Interior of Comarch building SSE6



**8 MILLION**

APPLICANTS HANDLED BY THE QUEUE MANAGEMENT  
SYSTEM OF THE SOCIAL INSURANCE SYSTEM (ZUS)



**475 000**

TRIALS



MORE THAN  
**600 000**

OWN CRYPTOGRAPHIC CARDS SOLD  
ON THE POLISH MARKET



MORE THAN  
**12 000**

OWN MICROSD CRYPTOGRAPHIC CARDS DELIVERED TO  
THE GENERAL POLICE HEADQUARTERS OF POLAND



**6.6 MILLION**

OBJECTS MANAGED WITHIN ONE PROJECT BY  
COMARCH FAULT MANAGEMENT



# Public Division

**Comarch ERGO** System supports the realization of public tasks connected with land management. It enables more than 60 registers and records to be run in the areas of geodesy, cartography, real estate management, spatial planning, road infrastructure management, construction, environmental protection, agricultural and forest land protection, protection of historical monuments and geoportals. The system's modular construction enables the exchange of information between local government units and cooperating parties, their faculties and employees. Comarch ERGO is a comprehensive solution allowing the launch of the Spatial Economy SSC electronic platform.

**Comarch EZD** supports the electronic (and paper) flow of documents in companies and institutions (industry-specific versions have been developed for particular entities).

**Comarch e-Office** is a platform of online public services with a set of modules that allow local public administration bodies to execute tasks set by the legislator. Intuitive tools allow independent management of the application, and ensure support for content creation and publication. Comarch e-Office includes the following modules, among others: Digital Office, Public Information Newsletter, Information Portal, and Internet.

**Comarch ERP Egeria** This ERP-class integrated IT system supports organization management and decision-making processes. It features a high configuration capacity and flexibility, which allows it to be adjusted to the individual needs of each client. The system is offered to different types of companies and institutions (government and local level administration, utilities, healthcare, etc.).

**Comarch Smart City Platform** is a comprehensive solution designed for dedicated to cities and urban matters. Comarch Smart City Engine, the heart of the platform, combines all platform elements with the existing municipal systems and infrastructure (including the Internet of Things). The platform is composed of: Comarch Partners Market, mobile applications, dedicated Comarch City Portal, Comarch Developers Platform and Comarch Smart City Console.

**Comarch Smart Parking** is a solution for the management of car parking areas. Our system provides car park operators and managers with tools such as real-time parking space detection using intelligent video analytics or a sensor network, support for indoor and outdoor parking, park and ride systems and municipal and private parking, and the generation of operational and managerial reports and statistics on the occupancy of car parks

**Comarch eRecording** is a comprehensive and coherent solution, which combines the convenience of classic audio/video recorders with sound systems and a dedicated application to control the process of audio/video registration. The system allows meetings and public appearances to be recorded, together with related metadata and comments, which guarantees efficient search for a recording during playback.

**Comarch Video Terminal** is a video conference client of video conference that supports popular connection standards and audio-visual transmission. It is also a suitable complement for Comarch eRecording, as it provides point-to-point connection, and compiles multi-party calls based on the standards and infrastructure of video conferencing bridges of leading suppliers.





**OVER 300 MILLION**

MEMBERS OF LOYALTY PROGRAMS IMPLEMENTED  
BY COMARCH



**OVER 100**

LOYALTY PROJECTS IMPLEMENTED



**650 MILLION**

DOCUMENTS PROCESSED BY COMARCH'S EDI SYSTEM IN 2018



**130 000 ENTITIES**

CONNECTED TO COMARCH EDI FROM 50 COUNTRIES  
WORLDWIDE



**60+ COUNTRIES**

IN WHICH COMARCH PROVIDES LEGALLY  
COMPLIANT E-INVOICING



**18 DATA CENTERS**

AROUND THE WORLD

# Services Division

For the past 20 years, the main goal of Comarch Services has been to design, create, and implement modern IT products that can help companies of any size or industry improve operational efficiency and reduce costs.

Comarch Services specialize in CRM and Marketing, e-Invoicing and Information and Communication Technologies (ICT). Our experienced engineers and consultants successfully manage projects on five continents in almost 50 countries. We help our clients to achieve better business results, reduce costs and keep up with the latest technology trends. Comarch's solutions contain Augmented Reality, Artificial Intelligence, Blockchain, Machine Learning, Big Data and Social Mining to give businesses the market advantage over global and local competition.

Our products receive multiple global and local awards and enthusiastic references every year. What is more, Comarch Services are constantly included in the top IT analyst rankings and reports by Forrester or Gartner, amongst others. Every achievement encourages us to further develop and expand our services.

What matters to us more is appreciation from our customers and business partners. Most companies we cooperate with are the A-listers from Forbes, Fortune and FTSE rankings. The list of our clients includes: BP Global, Carlsberg, Heathrow Airport, Metro Group, Diageo (producer of Johnnie Walker, Smirnoff, Baileys), Red Bull, Tesco, Colgate-Palmolive, Carrefour, Etihad, Heineken, Johnson&Johnson, L'Oréal, Philips, Sony, Samsung, Unilever, Technicolor and many more.

## Comarch CRM&Marketing

The offer is addressed to large enterprises. It involves a comprehensive set of IT services that helps build and manage loyalty programs, create customer relations, automate marketing processes and increase profits. Furthermore, we develop tools for big data analysis and gamification-based systems for building engagement, increasing profits and strengthening the relationships between clients, partners and the brand.

### AVAILABLE PRODUCTS:

**Comarch Loyalty Management** is a loyalty program management system that supports B2C and B2B operators, enabling the launch of multiple programs on a single platform and support for all areas (customer registration, profile management, promotions based on different currencies, communication with users, rewarding with gifts, special offers, badges or a higher level/ ranking position).

**Comarch Loyalty Management for Travel** is a platform dedicated for transport and tourist companies, (especially airlines) that supports loyalty programs for all carrier types, both for individual customers (Frequent Flyer Programs) and in the B2B model. The system supports the creation of rules for calculating points and defining rewards and privileges.

**Comarch Loyalty Management Cloud** offers a complete set of advanced functionalities typical for Enterprise-class loyalty systems while maintaining cost optimization based on monthly subscription fees. The aim of the CLM Cloud Service is to periodically provide customers with functional upgrades revised according to the Comarch roadmap.

**Comarch Campaign Management** is a system enabling quick and cost-effective design, launch and analysis of customer-oriented marketing campaigns. The system optimizes the campaign planning process, simplifies management, automates multi-channel communication with clients and enables analysis of the effectiveness of its results. The solution also helps to coordinate and follow the tasks of employees involved in campaign preparation

**Comarch Location Based Services** is an innovational technological platform that enables a highly personalized marketing communication directed through mobile application channels towards people, to clients, inhabitants or passengers at certain locations. The solution uses geo-localization and micro-localization and sends notifications through native iOS or Android applications. The platform contains a navigational module which enables the user to find their way in a building, which is helpful in large facilities such as shopping malls, hospitals and government offices. The platform is integrated with beacons produced by Comarch and the micro-localization is defined by Bluetooth.

**Comarch Business Intelligence** supports companies that want to build loyalty strategies through in-depth analysis of a large amount of collected data and provide a detailed picture of purchase patterns, shopping cart values, campaign effectiveness and statistics related to the program.

**Loyalty Consulting** is a dedicated set of services that help you create and execute successful loyalty programs, increase your profits, and raise brand awareness using modern channels of communication. Our scope of expertise includes developing robust marketing strategies, creating concepts for loyalty programs, designing rewarding and recognition schemes, and much more.

## Comarch E-Invoicing

The Comarch E-Invoicing portfolio enables effective document management and automation of sales and business processes taking place in the supply chain. A comprehensive approach to communication with partners from around the world, including electronic exchange of product, commercial, logistics and financial data, allows companies to achieve measurable benefits: faster access to information and a significant reduction of costs.

### WE OFFER THE FOLLOWING E-INVOICING SOLUTIONS:

**EDI (Electronic Data Interchange)** is a cloud-based B2B platform that enables fast and reliable exchange of electronic documents between business partners from around the world, regardless of their size or technological maturity and the industry they operate in. Digital communication increases the accuracy of information flow and provides rapid access to business data.

**MDM (Master Data Management)** is a central product catalog that allows companies to manage and exchange product data effectively with their business partners around the world. Providing each authorized party with instant access to a shared database, it guarantees real-time updates. As a certified GDSN catalog, Comarch MDM provides rapid product data synchronization within the GDSN network with partners around the world.

**Program Management Services** support in all processes: program organization, creation and selection of marketing service providers, management of relations with strategic partners, current application administration, performance reporting, detection and prevention of fraud, communication management, etc.

**Customer Analytics** is a set of BI expert services or data scientists in collecting, cleaning and auditing customer data, improving and maintaining data quality and analysis, creating customer segmentation models, migration analysis and customer activation strategy, prediction and scoring models, database marketing data and analyzing the level of customer satisfaction.

**E-Invoicing** is a product that both streamlines and automates all of a company's AP/AR invoicing processes to enable a secure and highly efficient invoices exchange with all business partners around the world, governmental platforms included. Comarch e-Invoicing platform enables the rapid replacement of paper invoices with their electronic counterparts, as well as archiving and compliance with different national legal requirements.

**Comarch Online Distribution** is an advanced reporting and communication platform for effective management of the entire distribution network. It automatically creates detailed stock and sales reports using data collected from your distributors' sales systems. All the information is sent to the central database where it is mapped, harmonized, and verified by certified Comarch consultants to help you produce the best results.

## Comarch ICT (Information and Communication Technologies)

Comarch ICT solutions allow control of the IT infrastructure of enterprises in telecommunications, outsourcing and data center sectors, based on global standards and technology partnerships with IT market leaders in data security.

### COMARCH DATA CENTER SOLUTIONS

**Colocation** – makes the service available for the client's devices in one of several data centers. As part of the service, the customer receives an

agreed space for their own devices in a room with physical, energy, environmental and fire safety.

**Disaster Recovery Center** is an optional service for all the above-mentioned solutions. It includes a backup data processing center for critical systems. The service is offered in PaaS or SaaS models, ensuring data replication between two centers and the activation of the backup environment in the event of failure of the primary location.

**Data Center Managed Services** transform data center management and IT operations, giving you the necessary technological flexibility and maximizing the efficiency and availability of the application. We provide the right people, processes, security and technologies in our own data centers, as well as cloud and networks to optimize data center services. We offer full management, so you can focus on strategic initiatives.

**IBM Power Services** are fully managed and delivered for IBM Power Systems technologies, which offer a secure and reliable solution for any medium or large company. These services will allow your company to increase efficiency and reduce the costs associated with operating IBM systems.

**Comarch POWER Cloud** is a ready to use platform which provides all the benefits of a cloud, along with expert IBM Power Platform support and managed services. With advanced tools it provides simplified virtualization management and cloud deployment for AIX, IBM i and Linux virtual machines.

## Comarch Managed Mainframe Services

provides fully-managed support and services for Mainframe-class systems. It provides technological and business assistance for installation, configuration and maintenance of Db2 products. In addition, we provide consulting services for capacity management, performance tracking and migration to higher versions of data management software.

**Comarch Cloud Infraspaces** is a unified and flexible cloud infrastructure with the highest security standards. The platform contains a wide range of tools supporting applications built on the basis of micro-services. The cloud solution provided by Comarch was created to help solve problems related to the lack of computing power, enabling the adjustment of performance to meet the actual demand for IT resources. The solution gives clients all the benefits of the cloud, such as lower IT costs, increased company efficiency and full control over existing IT resources while optimizing the reliability of corporate data and maximizing flexibility. Comarch Cloud Infraspaces comes with a wide range of Managed Services provided by experienced engineers in order to provide a customer-tailored solution. All this in a secure IT environment located in the Comarch Data Center.

## IT SERVICES SOLUTIONS

Due to dynamic changes in the IT infrastructure market, an experienced technology partner is important for business growth. Placing your company's IT environment in the hands of Comarch's engineers and analysts guarantees required system availability and the continuity of services customized to your needs.

**Comarch IT Services** – continuous and comprehensive IT services ranging from full support for the end user (Service Desk and job support), through LAN/WAN network administration, server and security infrastructure, to IT process management, according to good practices of the ITIL library.

**Comarch IT Integration** provides services that adapt the client's IT environment to new business and technical requirements. We support clients from the analysis and design stage of the new IT platform, through the supply of appropriate devices and software, to the implementation phase.

**Comarch Business Continuity** delivers services that ensure a high level of system availability, minimize the effects of failures and disasters and guarantee a quick return to the “before failure” state. In addition, we offer audits in various IT areas.

**Comarch Network Managed Services** are designed to create and maintain data transmission

networks (including WAN/LAN/WLAN). CNMS is a comprehensive product for the construction or modernization of existing transmission networks, the management and administration of these networks, and their security.

**Comarch Network Operations Center** is a single contact point, providing technical support in IT infrastructure and business applications for all types of enterprises and institutions. Clients gain knowledge about the current availability and performance of individual components of their IT infrastructure, operating systems, or operating platform.

**Comarch Service Desk** – a single point of contact for all end-users available 24/7. Our service desk allows you to minimize the costs associated with potential system failures and forced downtime. It also gathers information on possible existing problems to help you prevent or eliminate them in the future.

## IT RISK & SECURITY MANAGEMENT SOLUTIONS

**Managed IT Security Services** are an effective and high-quality solution addressed to companies seeking strategic partners who undertake comprehensive IT security management as part of outsourcing. Monitoring and analysis of security events, penetration tests and sensitivity scans are just a few examples of managed services. Comarch adapts the services it provides to meet business and operational demands, and helps clients to comply with IT management procedures and regulatory requirements in their country, handle corporate risk management, and implement industry standards.

**IT Security Auditing & Compliance** are services related to evaluation, processing and compliance with all security standards at regional and international levels. Regular data security audits

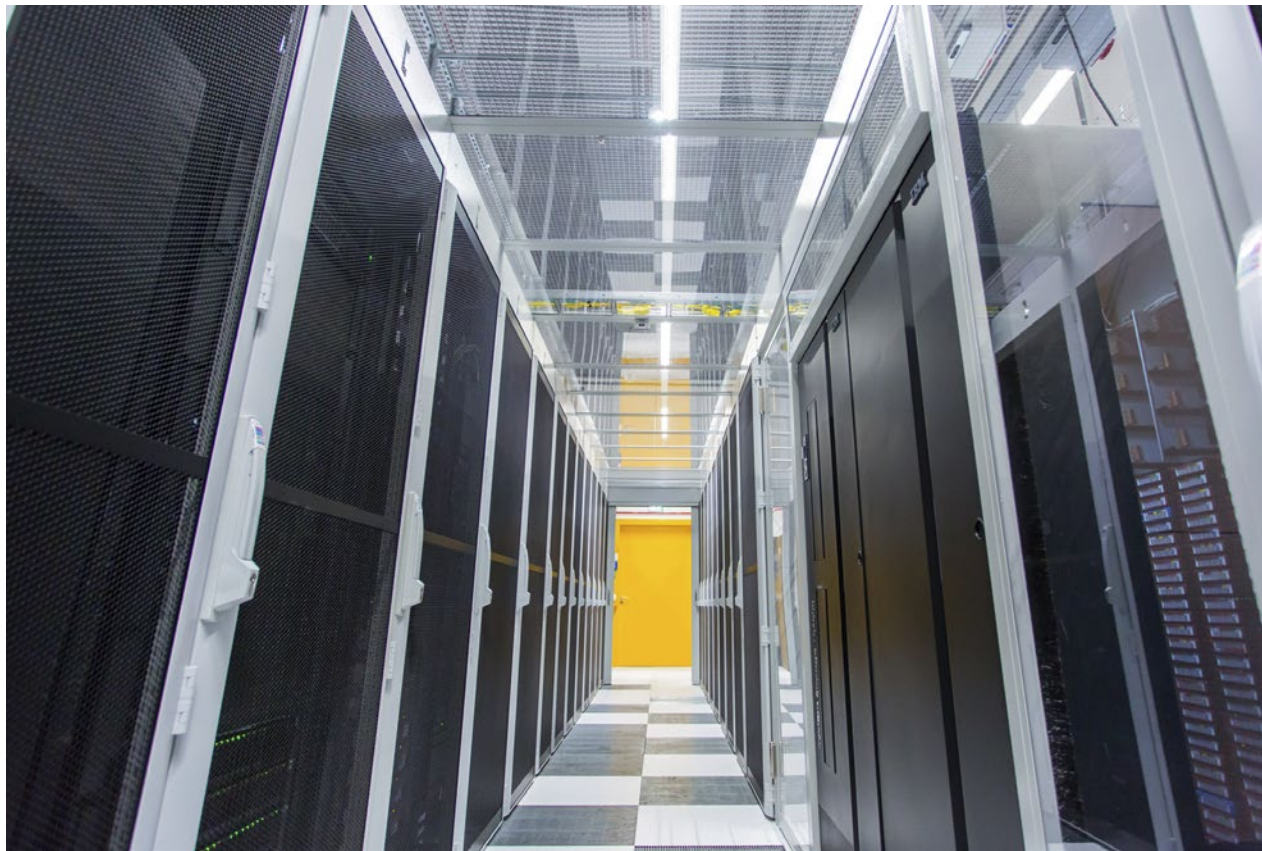
can detect a potential threat and prevent it early enough to neutralize the risk. We provide a wide range of services related to conducting a detailed audit of IT security, customized to the market needs and customer expectations.

**IT Security Integration & Support** delivers a full range of IT integration and support services, from network security solutions to SIEM (Security Information and Event Management) systems. Thanks to a team of qualified network engineers and security specialists, and many years of security management experience, we are able to provide solutions tailored to our clients' needs.





Global Operations Center in Kraków



Comarch Data Center in Kraków



MORE THAN  
**90 HOSPITALS**  
USE OUR SYSTEMS



ABOUT  
**40 000**  
USERS A DAY BENEFIT  
FROM OUR SYSTEMS



MORE THAN  
**200**  
OUTPATIENT CLINICS  
USE OUR SOFTWARE



IN 2018, ALMOST  
**20 000**  
PATIENTS WERE INCLUDED IN OUR  
REMOTE MEDICAL CARE PROJECTS



WE SUPPORT  
HEALTHCARE  
**24/7/365**



# The E-Health Division

Comarch e-Health offers a comprehensive ecosystem of products, consisting of EHR, Telemedicine, Hospital and Medical AI Clouds. Integration of these platforms ensures coordinated healthcare, and supports patients, their families, and medical personnel. The offer includes, among other things, IT systems for hospitals and software for health record management in medical facilities, cities, and regions. Comarch e-Health is a provider of innovative remote medical care solutions, based on our own software, devices and medical infrastructure.

## EHR CLOUD

Comarch EHR Cloud is a secure data archive created to provide efficient, coordinated health care. Information is uploaded from medical facilities (Hospital Information Systems), laboratories, diagnostic points, telemedicine platforms and patient applications. Data are collected in one place, regardless of their origin. Comarch EHR Cloud is an interoperable platform, open to third-party solutions. Free integration is possible by the use of IHE profiles for data transfer and documentation standards based on HL7CDA and PIK HL7CDA.

## TELEMEDICINE CLOUD

Comarch Telemedicine Cloud is an open cloud platform that enables remote monitoring of patients. All information from systems, applications, and measuring devices is transferred to the Comarch e-Care platform, then analyzed and made available to medical personnel. Thus, the process of diagnosis, treatment, and prophylaxis is optimized and coordinated. What is more, some services are transferred outside medical facilities. Comarch Telemedicine Cloud is a flexible and scalable solution that allows existing elements to be modified and new devices, procedures, and operation schemes to be added.

## COMARCH E-CARE PLATFORM

The basis of Telemedicine Cloud is the Comarch e-Care platform, which receives and processes medical data. Analysis is based on artificial intelligence (AI) learning algorithms, which immediately mark irregularities even in an immense amount of information. The Comarch e-Care platform also enables online consultations and remote descriptions of test results, significantly increasing access to high-quality medical services.

## REMOTE MEDICAL CARE

Remote Medical Care is a telemedicine service which allows constant monitoring of the patient's condition, as well as preventive procedures and check-ups outside medical facilities. This form of care is made possible by the use of mobile devices which measure vital signs. Results are transmitted to the Remote Medical Care Center, where they are analyzed automatically. If any abnormalities are detected, medical staff contact the patient, and call an ambulance in the event of an emergency.

## REMOTE CARDIAC CARE

Remote Cardiac Care enables the detection of abnormalities such as tachycardia, bradycardia, ventricular tachycardia, ventricular fibrillation, flutter, and more. It allows long-term diagnostics outside the hospital environment. Remote Cardiac Care can be implemented for hospitalized patients, and in overseeing the process of home rehabilitation.

## REMOTE PULMONARY CARE

Remote Pulmonary Care allows monitoring of patients suffering from asthma, COPD, and other pulmonary disorders. Regular spirometry, pulse oximetry and peak expiratory flow measurements are taken. These, along with constant specialist control, increase patient safety and comfort.

## REMOTE MATERNITY CARE

Remote Maternity Care enables passive CTG examinations in the home. Measurements are automatically sent to the Remote Medical Care Center and verified by a specialist. CTG tests, performed during the third trimester, allow full monitoring of fetal heartbeat and uterine contractions, without the expectant mother having to leave home.

## REMOTE SPECIALIST CARE

Remote Specialist Care allows patients to consult specialists about their health condition. Measurements of vital signs can be performed by patients, their carers or medical staff. Based on the results, the patient can consult with the attending physician remotely or arrange for a home visit. The physician can also call an ambulance if required.

## DIAGNOSTIC POINTS

Diagnostic Points are stations equipped with measuring devices, where patients can use remote medical care services in office buildings, airports, insurance companies, and others. Measurements of basic vital signs are taken independently by the patient and then evaluated by physicians through a telemedicine platform.

## HOSPITAL CLOUD

Comarch Hospital Cloud is a set of systems for the comprehensive management of medical facilities,

regardless of their specialization and size - from small offices to multi-hospital complexes. Interoperable, integrated IT systems are fitted to each stage of patient care. These are intuitive tools that coordinate staff activities, increasing work ergonomics. They have been designed for all employees of medical facilities, taking their roles, duties, and entitlements in the organization into account. All data are stored in a secure Comarch cloud, so there is no risk of loss or unauthorized access.

### COMARCH OPTIMED NXT

An advanced IT system for medical facility management (HIS), allowing holistic organization. It has six basic modules and more than 30 additional modules, covering all specializations. It provides integration with healthcare providers, services and peripheral systems.

### COMARCH EHR

A system for managing electronic health records in all types of medical entities, as well as at the regional level. It is an interoperable tool in accordance with IHE, HLF CDA, and XDS.b standards, allowing integration with external solutions.

### COMARCH MEDNOTE

A modern, intuitive application for managing any doctor's office. It organizes medical records, provides necessary information about the patients, and minimizes the time taken by formalities and paperwork.

### COMARCH CONCIERGE

An online patient portal that provides multi-channel communication and continuity of medical care. It enables remote registration, ordering prescriptions, and receiving test results and medical consultations.

### MEDICAL AI CLOUD

Comarch Medical AI Cloud is a set of solutions based on big data and machine learning algorithms that enhance our products with artificial intelligence. Machine learning and artificial intelligence process an unlimited amount of information, looking for correlations and irregularities. They automate processes and structure medical knowledge, thus reducing costs and increasing the efficiency of monitoring, diagnostics, and treatment. Comarch Medical AI Cloud has a wide range of application possibilities, from electronic medical records to ECG signal analysis.

### CMAP

CMAP (Comarch Medical Analysis Platform) is an algorithmic platform designed to analyze ECG signals from devices recording heart rates. It detects any irregularities immediately, and analyzes signal quality. It also improves the work of doctors, significantly shortening analysis time, even for lengthy tests.

### MEDICAL KNOWLEDGE BASE

A structured database of current medical knowledge, based on scientific papers and diagnostic procedures. Thus, a map of connections between symptoms and diseases is created. Phrases, areas of medicine and diagnostic steps are appropriately classified and stored. Thanks to this we support doctors in the diagnostic process, and patients receive individually tailored information and advice.

### DOCUMENT CLASSIFIER

A document classifier which automatically assigns scanned images and photos to the correct category by adding tags to files. It is based on an optical character recognition (OCR) engine. As a result, all data are logically ordered. The document classifier also allows recognition of the content of files, as well as classification and extraction of information.

### PATIENT HEALTH METAMODEL

A holistic overview of a patient's health condition, powered by information from all Comarch's systems and applications. It presents a full medical history (diseases, medications, tests, genetic loads, treatments, etc.). The most important data are highlighted through intelligent analysis, and then presented comprehensively. The preview can be adapted for patients, doctors or insurers, displaying elements relevant to them.

### MEDICAL e-INTERVIEW

Online medical interview, based on structured knowledge, diagnostic paths, machine learning and semantic analysis of the patient's responses. After each answer, it automatically sets the appropriate question path. It can be used to collect relevant, up to date patient information, and to suggest probable diagnoses.



The iMed24 medical center in Kraków



MORE THAN

**230 000**

CLIENTS USE THE BACKUP COMARCH IBARD SERVICE



MORE THAN

**80 000**

CLIENTS USE COMARCH ERP XT



MORE THAN

**1 226**

CLIENTS BUILT ONLINE STORES BASED ON  
COMARCH E-SHOP



MORE THAN

**2 585**

ACCOUNTANCY OFFICES IN THE IKSIEGOWOSC24 SOCIETY



MORE THAN

**224 000**

CLIENTS USE COMARCH CLOUD



MORE THAN

**30**

DIFFERENT SYSTEMS INTEGRATED IN  
ONE PROJECT BI



**100 000 000**

LINES LOADED DURING ONE ETL PROCESS IN BI

# ERP Division

**Comarch ERP Altum** is the first intelligent ERP platform, comprehensively supporting all key business processes in medium-sized and large trading, servicing companies, and retail networks. It is also addressed to holding companies. The solution is suited to the Polish market and foreign markets. The system is available in the service model (SaaS).

**Comarch ERP XL** has for many years been the most frequently selected ERP-class system in Poland, used by more than 5 000 companies in various sectors. Annually, 400 companies decide to implement it to manage their core business processes. The solution meets specific requirements of manufacturing companies, as well as trading companies and those involved in services. The system is available in the service model (SaaS).

**Comarch ERP Optima** is a program for micro, small and medium-sized enterprises supporting sales, management, accounting, HR and payroll. Along with the additional Accountancy Office module and the portal of Accounting Office Communities iKsięgowość24, Comarch ERP Optima is a tool to operate and promote accountancy offices and tax advisory firms. The program is available in the service model (SaaS).

**Comarch ERP XT** is an innovative application for online invoicing, warehouse operating and keeping simplified accounting made available over a web browser or mobile applications for Android and iOS. The solution is dedicated to micro and small companies in Poland, France, and Germany. The core advantages are simplicity of use, full process automation, and the option of accountancy office integration with the portals Wszytko.pl, Comarch e-Sklep, and Comarch BI Point. The application is provided with a POS module for fast support of retail sales. The program is available in the service model (SaaS) only.

**Comarch Retail** is a standalone system for retail sales in a full omnichannel model. It supports effective and comprehensive management of retail networks, starting from the head office through the store's back office to points of sale (POS).

**Comarch Mobile** is a solution dedicated to management teams and mobile staff, e.g. trade representatives, maintenance technicians and sales assistants, who perform their tasks outside offices, using smartphones or tablets. The packet is composed of: **Comarch Mobile Management, Comarch Mobile**

**Sales, Comarch Mobile Monitoring, Comarch Mobile mPOS, Comarch Mobile Service, and Comarch Mobile Procurement.** The individual applications in the Comarch Mobile packet provide for management of mobile staff and their sales, for monitoring the results of their performance, and for establishing the current location of staff and the routes registered by them. They provide effective van-selling and pre-selling directly during visits paid to customers, as well as registration of offers and purchase orders with suppliers, e.g. at Specialized fairs. Additionally, Comarch Mobile provides for the execution of maintenance orders, e.g. during inspections, assembly, or repair of devices.

**Comarch WMS** is a solution providing comprehensive handling of high rack warehouses. The packet is composed of: **Comarch WMS Management** and **Comarch WMS Warehouse.** Comarch WMS Management is a tool addressed to warehouse managers to control storage operations and manage flows of goods within warehouses. Comarch WMS Warehouse enhances the performance of staff operations directly in warehouses by applying data collectors operating online.

**Comarch Business Intelligence** is based on data warehouse technology, addressed to large and medium-sized companies and international corporations. The solution supports decision-making processes and reporting tasks. "It is designed for the finance, insurance, FMCG, services and manufacturing sectors.

**Comarch BI Point** is a web business intelligence reporting tool that supports generation, view, and provision of comprehensive reports and interactive managerial cockpits. An integrated repository and an embedded rights management mechanism supports management of users' access to selected reports and individual data models. As a result of its responsiveness, the application can also be used on mobile devices. With its intuitive interface and many interesting visualization forms, even less experienced users can develop attractive dashboards. The tool is used by all types of enterprises of varying size. It is addressed primarily to analysts, controllers, and managers.

**Comarch IBARD** is an easy to use, multi-functional tool that can be used for instance to perform and schedule back-ups of files, directories and databases from PCs, laptops, and servers, to perform back-ups of mobile ddevices, and to transfer and store data securely in the cloud. The service ensures uninterrupted



24h access to data from any device and place. A major advantage is the high level security of stored data, which are kept in a certified Comarch Data Center in Poland and protected by double encryption and an internal encryption key. Comarch IBARD is available in five languages (Polish, English, German, French, and Spanish). The service is universal and may be used by both small and medium-sized enterprises, as well as service providers such as telecoms that offer services to their customers under their own brands (White Label model).

**Comarch TNA** (Time and Attendance) is a modern system to record and manage working time, business trips, annual leaves, and other processes focused on company employees. This is a tool relying on cooperation of **Comarch TNA Gateway** and **Comarch TNA Gateway Plus** with the company's proprietary mobile application and a user panel available via a web browser. The solution may operate on its own or with other Comarch systems. It can also be integrated with solutions of other companies.

**Comarch CSM** (Cloud Service Management) is a comprehensive platform for selling and managing cloud services, supporting providers in offering services, applications, infrastructure, and other cloud products. Comarch CSM collects all information on orders, prices and service validity, and provides for contact with customers. It can be integrated with any service via third-party API.

**Comarch SSO** (Single Sign-on) is a secure single sign-on system. By logging into one service, other services can be used without repeating sign-on. Comarch SSO provides full user security when logging on to a multi-service environment.

**Comarch Hosting** is an integrated comprehensive solution tailored to customers' individual needs. It consists of renting a hardware platform located in the Comarch Data Center along with the required licences of external providers (e.g. Microsoft). Additionally, the offer covers a number of services relating to management and administration of the hardware platform and software. The solution is characterized by flexible management of resources that are scaled up along with the customer's growing needs.

**iKsięgowość24** delivers accounting and book-keeping services for enterprises. It is used by more than 2 500 accountancy offices operating Comarch ERP Optima.

**Comarch B2B** is a platform that, among other things, provides for ordering products online. Logged-in counter-parties have access to the history of their orders, payments and complaints, and can view the status of their maintenance and manufacturing orders. The application interoperates with Comarch ERP XL and Comarch ERP Altum.

**Comarch e-Sklep** is online store software for small and medium-sized enterprises. It is fully integrated with Comarch ERP management systems, price comparison and Allegro and eBay auction platforms, as well online payment platforms.

**Wszystko.pl** is a trading platform supporting e-sales directly from invoicing and warehousing systems operated by enterprises. Products may be offered by any company operating Comarch ERP management software.

**Comarch HRM** is an application for managing working time, annual leave, and more. It integrates with the HR and payroll module in Comarch ERP Optima, Comarch ERP XL and Comarch ERP Altum. The application may be used on computers, laptops, tablets, and smartphones. The program is dynamically adjusted to the size of the screen on which it is displayed. It may be installed on the user's local computer or in a service model in the Comarch cloud (SaaS).

**Comarch e-Sprawozdania** is a program for generating electronic financial statements, which, among others, are compliant with the Accounting Act. It is characterized by abundant functionalities (with electronic signature in the application), easy to handle and that can be integrated with ERP systems. The program may be used in a desktop version installed on a computer, or in the cloud, in a subscription model from any computer with Internet access. The application generates structures of financial statements **compliant with the requirements of the Ministry of Finance**.

**Comarch ERP Inwentaryzacja** is used to make inventory records using a smartphone. Using the phone's camera, it scans bar codes of goods scanned and inputs their quantities or has them automatically counted for the user.

**Comarch Software Systems and Beratung AG** are a line off ERP and financial and accounting systems for small and medium-sized enterprises on the German language market:

- **Comarch ERP Enterprise** is a new generation of ERP system for active enterprises operating on international markets. it uses the Internet, runs an ergonomic user interface and built-in WorkFlow module, and is optimized to best reflect business processes and the organization's structure. The system is also available in the service model (SaaS).
- **Comarch Financials Enterprise** is a new generation financial and accounting system, developed as a supplement to Comarch ERP Enterprise, supporting comprehensive financial management in modern enterprises. The system is also available in the service model (SaaS).
- **Comarch ERP Suite** is a classic ERP system, offering tested and sector-specific functional solutions for a broad range of users.
- **Comarch Financials Suite** is an expanded, certified financial and accounting system, containing modules for managing and archiving electronic documents in an international environment and in line with various accounting standards (US GAAP, IFRS).
- **Comarch Financials Schilling** is a classic financial and accounting system.
- **Comarch Financials DKS** is a financial and accounting system developed for Austrian customers, provided along with a controlling and HR module.
- **Comarch HR** is a system dedicated to HR and employee settlements, supporting management of the working time and recruitment processes
- **Comarch ECM** is a system for electronic document archiving and management, supporting complete electronic workflows in enterprises,
- **Comarch eBilanz** is an application for electronic transfer of financial statements to public authorities in Germany, operating with various financial and accounting systems. .
- **Comarch eRechnung** is an application for handling e-invoices in Germany in compliance with the applicable regulations, operating with Comarch's German financial and accounting systems.





**25 YEARS**  
OF EXPERIENCE



MORE THAN  
**10 000**  
CLIENTS EACH YEAR



MORE THAN  
**300**  
TRAINING PROGRAMS



**90**  
CERTIFIED INSTRUCTORS



COURSES IN  
**8**  
BIGGEST TRAINING CENTERS

# Training Center

## ABOUT TRAINING CENTER

The Comarch Training Center organizes specialized training events and IT consultations at various levels, covering a broad area of IT knowledge.

The instructors at Comarch Training Center are experts in their fields. Not only do they have substantial professional backgrounds, but they are also dedicated to sharing their knowledge by teaching.

Our dedicated team members are proud to possess professional certificates in the following areas:

- OCP – Oracle Certified Professional
- MCSE – Microsoft Certified System Engineer
- MCT – Microsoft Certified Trainer
- Certified Lotus Instructor
- Linux Certified Professional and Linux Certified Administrator
- CCNP – Cisco Certified Network Professional

With long-term experience, we can recognize all the needs of the client and offer the best form of training events. By continuously expanding our knowledge and searching for new methods of sharing it, we ensure our clients quickly acquire the skills which allow them to overcome all the barriers in the field of modern information technology.



## THE OFFER

- Authorized Cisco training
- Databases (Oracle, MS SQL)
- Programming (SQL, PL/SQL QT)
- Office applications
- Project management
- Operating systems (Unix, Linux, Windows)
- Authorized Microsoft training

After completion, each training participant is awarded the Training Completion Certificate issued by our Center.

# 07

## **Sustainable Business**

# Comarch S.A.'s Management Board's Statement Addressed to the Company's Shareholders in the Field of Reporting Non-financial Issues

Dear Shareholders,

The Comarch Group, due to the size of the company and the scope of its activity, exerts a significant influence on its environment, especially in the economic and social spheres. Sustainable development is one of the key foundations of the company's strategy, and has been so from the very outset. In the opinion of the Group's Management Board, this has contributed significantly to the company's market success. This Non-Financial Data Report of the Comarch Group is the third in a row and the second published after the entry into force of such obligation. Regardless of the formal requirements, Comarch has been using good practices in the field of non-financial reporting for many years (including through the publication of relevant information on the Internet and in annual reports).

This results both from the internal need to communicate with shareholders, as well as compliance with the Corporate Governance Principles for listed companies and the provisions of the Accounting Act. Due to the business profile of the company, social issues related to employment and human rights as well as issues related to diversity management, especially in the area of management and supervisory bodies, are the key issues for Comarch regarding sustainable development. In the opinion of the Management Board of the Comarch S.A., adherence to relevant standards and reporting on them is essential for proper human resources management, and thus is a key element for ensuring long-term development and maintaining the competitive advantage of the company. The key events related to sustainable development and non-financial reporting, recorded in the reporting period, were continuous improvement of management quality, increased role of "soft" incentives, increased promotion of physical and cultural activity among employees, increased management awareness of issues related to diversity, as well as improving suppliers' management procedures.

The Comarch Group constantly conducts activities to protect the natural environment, an examples of which in 2018 was the implementation of the ISO 50001 Energy Management System and promoting pro-ecological attitudes among the crew. The Group constantly supports various initiatives of local communities and significantly increased the scale of charitable activities. The Management Board of Comarch S.A. points that the Non-Financial Information Report for 2018 includes non-financial information regarding Comarch S.A. and the Comarch Capital Group. The report was prepared in accordance with the requirements of non-financial reporting included in the Accounting Act of 29<sup>th</sup> September, 1994, European Commission guidelines on reporting on non-financial information and on the basis of the National Non-Financial Information Standards (SIN) guidelines sustainable development reports. The most important challenges and goals of the organization for the next year in the field of non-financial reporting include improvement of processes within the organization, allowing to achieve the target quality and completeness of reporting, as well as reducing its labor intensity.

Management Board of Comarch S.A.

# Integrated Management System

Comarch puts a particular emphasis on the quality of provided products and services. Efforts to increase this value are undertaken to satisfy the growing and well-defined expectations of clients operating on the domestic and international market. Thanks to continuous work on the improvement and development of the Integrated Management System, Comarch obtained:

- Certificate of Energy Management System compliant with the requirements of PN-EN ISO 50001: 2012. Energy Management Systems
- Certificate of the Internal Control System that meets the requirements of the ICS Criteria
- Certificates which confirm that the Quality Management System meets the requirements of AQAP 2110: 2016-NATO requirements for quality assurance in design, development and production as well as AQAP 2210: 2015-NATO supplementary requirements for AQAP 2110 regarding software quality assurance
- Certificate which confirms that the Quality Management System of Medical Devices meets the requirements of EN-ISO 13485:2016 Medical Devices. Quality Management Systems Requirements for the purposes of legal provisions

Certificates of the Integrated Management System, Energy Management System and Internal Control System were issued by the Polish Center for Testing and Certification (PCTC). The certification body for the AQAP system at Comarch is the Quality Certification Centre (QCC) operating at the Military University of Technology. Certificates of the Quality Management System of Medical Devices were issued by TÜV Rheinland Polska Sp. z o.o

## Comarch Capital Group Code of Conduct

### I. THE HIGHEST ETHICAL STANDARDS

Comarch CG is aware of the importance of abiding by the regulations, legal provisions, working procedures and ethical standards it sets for itself. As a leader of the IT market in Europe, Comarch is committed to promoting ethics and is striving to be among the world leaders in fostering corporate responsibility, respect for human rights and environmental protection. The achievement of this goal is the joint responsibility of all Comarch employees.

The present Code of Conduct has been approved by the Comarch CG Management Board, which is committed to regular assessment and observance

of the code, and to amending it on the basis of submitted proposals.

The Code reflects the ethical values that Comarch upholds and intends to abide by. For the employees of Comarch CG, it constitutes the standard of behavior towards fellow employees as well as towards superiors, customers, partners, and local communities when doing business and also when involved in business related activities.

The present Code of Conduct shall be circulated and publicized by Comarch's PR department.

### II. THE MISSION OF COMARCH CAPITAL GROUP

#### RESPONSIBILITY FOR THE SUCCESS OF OUR CUSTOMERS

Comarch is a global supplier of IT services, which comprehensively support customer relationships and optimize operational activity and business processes. The company's in-depth knowledge of the industry is its main advantage, and we hand this on to our customers in the form of integrated IT solutions. Ever since its establishment, Comarch has placed great emphasis on the delivery of

applications and professional services of the highest quality in such a way as to ensure that they can be optimally applied in customers' day to day activities. In this respect, Comarch has already acquired a strong position as a supplier of comprehensive IT solutions. Comarch CG aims at to deliver innovative IT solutions to all sectors of the economy.

More than 5 000 experienced specialists and consultants work for our customers in the US, Europe and the Middle East. We have conducted thousands of comprehensive implementations and these have benefitted from the use of the most modern technologies, an in-depth knowledge of market trends and a sense of responsibility. More than a thousand customers in Poland and abroad use Comarch software, and we are proud of the fact that many of our international customers consider Comarch to be an excellent example of a thriving Central European IT company that is efficiently winning global markets. The company's domestic and international product development strategy is supported by extensive R&D investments. In

2015, expenditure on research and development exceeded PLN 138.2 million, 12% of total sales revenues of the Group. In concentrating its efforts on spreading knowledge, Comarch organizes research and development programs based on cooperation with consultants, analysts and customers. The main idea of these programs is to distribute knowledge and to check, compare and revise our ideas for the development of new technologies while also taking into account market trends. Comarch's strategy is based on using the diverse experience and knowledge of its employees to deliver a full range of IT services from consulting, through the implementation of individual solutions, to outsourcing.

### III. THE VALUES CHERISHED BY COMARCH CAPITAL GROUP

In the Group's internal relations and connection with shareholders, Comarch cherishes universal values by fostering honesty, diligence and conscientiousness in the delivery of the tasks the Group is entrusted with, quality and innovation as individual goals

the employees set for themselves, building and maintaining trust among co-workers and business partners, as well as respect, understanding and willingness to help and assist others regardless of the position held in the company or diversity of opinion.

### IV. MAINTENANCE OF THE HIGHEST STANDARDS OF WORK

Comarch Capital Group respects and maintains international standards regarding human rights as well as the international standards of work, perceiving them as fundamental and universal.

Comarch CG respects and executes labor law regulations as well as health and safety provisions and ensures that employees are always treated in accordance with the requirements in force.

Recognizing the right of employees to free association, Comarch CG engages in dialog with an elected council of employee representatives.

The Group respects the prohibition of discrimination based on race, social status, ethnicity, religion, impairment, disability, sex, sexual orientation, political affiliation and views, age or marital status.

The company guarantees freedom of conscience and religion as well as freedom of speech and opinion.

Comarch CG promotes teamwork that is free from any prejudice and consciously pulls strength from the values which are there to draw on and that stem from the diversity among the employees. In return, the Group makes every effort to ensure that their employees get fair and regular remuneration and have development possibilities, stimulating challenges, and very good working conditions.

Comarch CG protects its employees' copyright and, with regard to international standards, respects their intellectual property as personal goods that should be free from any abuse.

The Group respects the prohibition of the following: the work of children below the age of 15, the use of corporal punishment, mental and physical bullying, insults and sexual harassment, and considers the workplace free of such practices.

### V. CORRUPTION AND PROMOTION OF FAIR COMPETITION

Comarch Capital Group observes the rules of fair competition and prevents bribery, illegal payments and corruption.

It is the duty of Comarch Capital Group's employees to avoid any activity leading to a conflict of interests, namely receiving or offering gifts as a part of business and commercial activity.

It is forbidden to pay or to propose bribes or illegal services to state officials or the representatives of political parties in order to make or to keep a transaction. Comarch employees shall not

derive benefits or assist in deriving benefits from opportunities which may arise as a result of using company information or their position within the Group.

## VI. PARTNERSHIP IN BUSINESS

### Customer Relationships

Comarch CG's main principles are responsibility for its customers' success as well as respect for and openness to their needs. Comarch delivers innovative IT services of the highest quality, which result from the employees' experience and exceptional skill, and from cooperation with the leading research and development centers in Poland and abroad. The Group spares no effort in ensuring that the IT solutions delivered correspond with the highest standards and customer requirements.

### Contacts with Public Administration

As far as contact with the public sector customers (central and local government, community partnerships, treasury companies, public health

centers) is concerned, the provisions of the Public Procurement Act of 29 January 2004 (Journal of Laws of 2004, no. 19, item 177 with amendments) are applied. These provisions regulate the method of communication with the ordering person during the tender procedure, the scope of activities which can be undertaken by the parties to the procedure as well as the resources available for legal protection.

### Security in International Business

In order to ensure control and security in the trading of products, technologies and services which are strategically important for your security, Comarch CG has implemented the Export Control System, which guarantees that international and domestic standards and requirements are applied.

## VII. INTEGRATED MANAGEMENT SYSTEM

Comarch Capital Group sets particular standards by the quality of the products it offers and the services it provides. Quality-raising initiatives are therefore undertaken to ensure that the ever increasing and more specific expectations of customers on both the Polish and international markets can be met.

The Integrated Management System guarantees the correct system of administration for the realization of all business processes which have a bearing upon product and service quality. The effective operation of this system ensures that processes are continuously monitored and that they are improved and adapted according to the changing market conditions, technologies and customer requirements. The emphasis placed upon the quality of products and

services runs parallel to the Group's active support of environmental protection, and strict adherence to the security principles that apply to employees and suppliers.

Compliance with the rules and systems implemented at Comarch results in relations of trust being developed between the company and its customers and suppliers. In this way, Comarch's corporate image is reinforced in the eyes of all parties interested in the effects of the company's activities within such areas as product and service quality, impact upon the natural environment, occupational health and safety, information and data security, and the sale of dual-use products.

## VIII. ECOLOGICAL AWARENESS

Comarch Capital Group follows the legal regulations regarding the protection of the natural environment. Comarch makes great efforts to limit the impact of its activities upon the natural environment by minimizing the exploitation of natural resources and the amount of waste resulting from current activities.

The company also promotes an ecological lifestyle among its employees by supporting initiatives that encourage the active protection of the natural environment.



## IX. CORPORATE SOCIAL RESPONSIBILITY

Comarch Capital Group has been deeply involved in social activities since its inception, by propagating the idea of an extended social platform for promoting sport and advanced IT technologies.

As far as promoting and supporting sports is concerned, the principal object of Comarch's engagement is MKS Cracovia SSA, the oldest sports club in Kraków, which participates in professional leagues and competitions in several sports disciplines with a focus on football and ice hockey. Comarch Capital Group is also involved in promoting sports among young people.

Comarch provides its employees with permanent and free access to recreation facilities located in one of the company buildings, and so encourages them and their families to lead an active lifestyle.

Another idea widely promoted by Comarch Capital Group is the organization of knowledge regarding the most recent IT technologies. Every year, a group of approximately 300 IT students participate in a three-month summer internship program at Comarch, which enables young people from all over the world to become familiar with cutting-edge IT solutions for business.

Furthermore, Comarch supports Polish science by taking part in and co-financing scientific conferences.

Finally, Comarch Capital Group is also a frequent sponsor of cultural events, including festivals, concerts and other socially significant events.

## X. IMPLEMENTATION AND ENFORCEMENT

All obscurities, ambiguities and problems related to the interpretation of the Code of Conduct should be submitted to the Spokesperson on Ethics appointed by the Management Board. Comarch employees are encouraged to present any remarks or suggestions regarding the modification of the Code of Conduct.

The Spokesperson on Ethics is responsible for:

- Supporting employees with regard to complying with the Code of Conduct

- Promoting the Code within the company
- Updating the Code
- Taking proper steps in response to any problems that employees may have regarding the ethical dimensions of the business activities they undertake
- Employees of Comarch Capital Group are entitled to expect assistance and support from the Spokesperson on Ethics regarding questions submitted by e-mail to: [etyka@comarch.com](mailto:etyka@comarch.com)

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## DECLARATION OF POLISH BUSINESS FOR SUSTAINABLE DEVELOPMENT

In May 2014, Comarch signed the "Declaration of Polish Business for Sustainable Development" and thus gave an assurance that the company would work actively towards the development goals set out in the Vision of Sustainable Development for Polish Business 2050. The Declaration contains 10 assumptions that will allow, in the future, living with dignity and the wise use of our planet's limited resource.

Signing of the Declaration took place with the inauguration of the 3rd Stage of the Sustainable Development Vision project for Polish Business 2050. The participants of the meeting were made aware with the proposals planned for the 3rd Stage of Vision 2050. The signatories of the Declaration have the opportunity to engage in the following working groups: social innovation, sustainable production and consumption, renewable energy sources, greening the new perspective and small and medium enterprises.

The Vision 2050 project refers to the international initiative taken by the World Business Council for Sustainable Development (WBCSD). Vision 2050 is a joint project of the Ministry of Economy, Ministry of the Environment, the Responsible Forum and consulting company PwC. The aim of the undertaken activities is to integrate business in Poland around the idea of sustainable development, to indicate to business representatives the importance of challenges in this area, and to strengthen the administration and business dialog to develop specific solutions to support the implementation of Poland's development goals. Comarch has been cooperating with the organization on the recovery of electrical and electronic equipment for several years.

By signing the "Declaration of Polish Business for Sustainable Development," Comarch committed to:

- Support its activities for broad cooperation, innovative thinking and education of both its own employees and society
- Conduct its business based on trust and dialog
- Cooperate with academic centres and schools in the field of education of future employees
- Create conditions and development opportunities for employees
- Promote and support the implementation of new technological solutions
- Create infrastructure and conduct investments based on dialogue and in accordance with the principles of sustainable development
- Take action to reduce its negative impact on the environment
- Introduce a solution that reduce energy consumption, both in the implementation of new technological solutions, process optimization and education
- Engage in dialog with the government and share its experiences on issues important to entrepreneurs and the economy
- Raise the level of ethics in business, including in relations with all groups of stakeholders

The risk for the above Declaration is failure to meet its assumptions. Comarch is successively striving to meet them through effective implementation of processes within the Integrated Management System and implementation of all the above-described policies.



### ***Declaration of Polish Businesses for Sustainable Development***

Aware of the challenges faced by the Polish economy and fully recognizing the need to pursue a path of sustainable development, we, the undersigned, hereby commit:

- I. To running our operations based on extensive cooperation, innovative thinking and education of our own employees and society at large.
- II. To carrying out business based on trust and dialog.
- III. To cooperating with academic institutions and schools in the education of future employees.
- IV. To creating conditions and opportunities for the professional advancement of employees.
- V. To promoting the implementation of new technologies and their support.
- VI. To building infrastructure and running projects based on dialog and in line with principles of sustainable development.
- VII. To taking steps to reduce our adverse impact on the environment.
- VIII. To introducing solutions designed to reduce energy consumption by deploying new technologies, streamlining processes and education.
- IX. To communicating with the government and sharing our experience in areas relevant to business and economy.
- X. To enhancing ethical standards of business conduct, including relations with all groups of stakeholders.

Declaration of Polish Businesses for Sustainable Development

## HUMAN RIGHTS

The Comarch Capital Group respects and complies with international standards regarding human rights and international labor standards, treating them as fundamental and universal. Comarch respects and implements labor law and occupational safety and hygiene regulations, and also ensures that employees are always treated in accordance with the applicable requirements.

Recognizing the right of employees to free association, Comarch undertakes a dialog with the elected council of employee representatives. Comarch has not identified cases in which there may be a violation of the rules or there may be a serious risk of association and collective bargaining both within the organization and among suppliers.

Comarch respects the prohibition of discrimination due to: race, social status, ethnic origin, religion, disability, invalidity, gender, sexual orientation, relationship or political affiliation, age or marital status.

Comarch guarantees freedom of opinion, conscience and religion as well as freedom of beliefs and expression. The Comarch Capital Group promotes team work free from any prejudices and consciously derives strength and values resulting from the

diversity of its employees. In return, the company makes every effort to provide its employees with fair and regularly paid wages, the possibility of development, interesting and ambitious challenges and very good working conditions.

The Comarch Capital Group protects the copyrights of its employees and also, in relation to international standards, respects intellectual property as an individual good, safe from abuse.

The Comarch Capital Group respects to the prohibition of the work of children under 16, forced labor, corporal punishment, mental and physical coercion and insults, as well as the prohibition of sexual harassment, and declares the workplace to be free of such practices. Both Comarch S.A. as well as the Comarch Group did not identify cases of violation of human rights, child labor or forced labor, including subcontractors. No complaints about respect for human rights were received.

Employees of the Comarch Group companies are trained in the dimension of respect for human rights and in the ethical area during first step training organized by the employer in the first days of work at Comarch.

# Policy of Internal Control System

Broadly understood technological development and rapidly growing competition put new requirements on software, implemented IT systems and goods in circulation. The necessity to meet these requirements means that the products provided by Comarch may be goods of dual use and be used in a manner inconsistent with the principles of national and international law. To prevent such practices, the Internal Control System has been implemented within the Comarch Capital Group, whose main document is the Policy of Internal Control System. The main assumptions of this policy are as follows:

- Excluding the possibility of making a profit contrary to the requirements of the Internal Control System
- Omission to handle trade in goods when it is contrary to national and international law
- Enforce the rules of the Internal Control System at all workstations related to trade in goods
- Supervision of the Proxy for Turnover Control over the course of the Internal Control System processes

As part of the Integrated Management System, the following critical risks were identified:

- The risk related to incorrect classification of products and services under ICS
- The risk related to undertaking a cooperation with a contractor on the list of refusals
- Risk related to the realization of transactions with entities from countries subject to legal sanctions
- Risk related to non-compliance with legal requirements and internal procedures regarding IMS

Minimization of risks related to international trade in goods is carried out within the mechanisms described in the section "Policy of the Integrated Management System". In the case of the ICS, an important role is played by IT systems dedicated to issues related (for example, a system for contract workflow), where individual steps enforce specific actions required by IMS. Specific, for ICS, processes, such as dealing with dual-use goods and services or verification of contractors on refusal lists, are described in internal procedures.

Supervision over specific, for ICS, processes is carried out as part of internal audits. Non-compliance, potential risks and opportunities are identified. There are also statistics in this area. In 2018, one non-compliance directly related to ICS was identified as part of internal audits.

# Security Policy

Information and information processing systems constitute critical and extremely important goodwill, which is why Comarch places great emphasis on protecting data and own and customers assets. A comprehensive information protection system based on the PN-ISO/IEC 27001:2014-12 and ISO / IEC 27002:2013 standards was implemented. The system has been certified by the Polish Center for Testing and Certification (PCTC) since 2008 as part of the Integrated Management System. The system covers all internal processes supporting the company's activity and business processes and covers all of the company's assets.

The Security Policy regulations include organizational issues, raising of employee awareness, physical asset protection, IT technical security, business continuity and response to incidents of information security breaches. Internal policies and procedures have been defined to regulate the confidentiality, integrity and availability of Comarch and clients data, which in particular define:

- Rules for classifying and handling information,
- Comarch IT network management policy
- Systems and application administration rules
- Principles of staying at and access to Comarch premises
- Principles of the use of assets and bringing equipment out of Comarch
- Principles of securing personal computers
- Principles of securing information mediums
- Principles of remote access
- Principles of email security
- Password policy
- Business continuity policy
- Antivirus policy

Many organizational and technical measures were implemented to ensure comprehensive and multi-level protection of data and assets to counteract

and minimize the effects of information security incidents.

The system ensures a continuous process of monitoring and reacting to information security risks. It allows to continuous improvement of Comarch's as well as clients' data and assets protection. Conclusions from the operation of the safety management system are reported to the Management Board and necessary improvements and corrective actions are taken.

Among the most important risk, which are counteracted by the implemented security measures, can be mentioned:

- Breach of information security
- Unauthorized operations
- Unavailability of key services and Comarch space
- Compliance with regulations

Within the company, dedicated business units operate to deal with information protection, determination and implementation of standards and monitoring the security of Comarch's assets.

Business continuity plans were developed to maintain business continuity in key areas of the company.

# Sustainable Development Policy for Suppliers

Comarch as a global organization specializing in the design, implementation and integration of advanced IT products has a significant impact on the functioning of the supply chain. In addition, as a company, we realize that the success of undertaken projects depends not only on us but also, to a large extent, on our business partners. The key issue is the appropriate selection of contractors who meet the criteria to the greatest extent possible. Thanks to this, we can be sure that cooperation with them will in no way disrupt the stability and efficiency of processes implemented within the supply chain.

The Comarch Capital Group has a Sustainable Development Policy for Suppliers, which defines the most important principles that the company follows during cooperation with business partners. In addition, this document is a commitment to a sustainable development policy and sets out requirements for key suppliers.

These commitments are implemented mainly through:

- Supporting and encouraging our clients and suppliers to act in accordance with the principles of ethics, social responsibility and environmental protection
- Building a good partnership with suppliers based on mutual cooperation, trust and integrity
- Conducting activities related to orders in accordance with rules of law and legal regulations - domestic and international
- Selection of suppliers with the conviction that only responsible practices in the supply chain can ensure the highest quality of the final product or service, while at the same time caring for the environment, good work standards, business ethics and local communities
- Managing environmental impact in a responsible manner in accordance with ISO 14001 or similar standards to reduce the negative impact on the environment
- Applying occupational health and safety standards in accordance with OHSAS 18001 or a similar standard to minimize the risks associated with occupational risk and prevent injuries
- Use with understanding of good business practices, social issues and related to environmental protection, which are related to the activities of the supplier
- Operation in accordance with applicable law,
- Recognition of employees' right to associate and collective bargaining
- Prohibition of discrimination in all its manifestations, due to race, social status, ethnic origin, religion, disability, invalidity, gender, sexual orientation, relationship or political affiliation, age or marital status
- Prohibition of employment of children under 16 and the application of corporal punishment, mental and physical coercion, abuse and sexual harassment
- Elimination of forced labor

We are convinced that high standards of conduct in business, to which Comarch undertakes to comply, should also be expected of our contractors. That is why we require the following rules from our key suppliers:



# Policy of Respect for Intellectual Property of Third Parties

As a software development company, the Comarch Group understands the need to respect intellectual property rights and, for its part, strives to fully respect the intellectual property of third parties, including other software developers, as well as Comarch's suppliers and customers. Comarch abides by legal regulations concerning the principles of respecting intellectual property of third parties at the level of international, community and national law and supports the system of intellectual property protection. Comarch makes every effort to ensure the highest level of protection of intellectual property rights of third parties.

The basic policy objectives in force in the Comarch Group regarding these issues are:

- Taking care to ensure respect for intellectual property of third parties
- Ensuring respect of patents, trademarks and other industrial property rights of third parties
- The use of intellectual property, patents, trademarks and other industrial property rights of third parties in accordance with the law and the licenses obtained by Comarch
- Use of third parties software only in the scope of licenses granted to Comarch
- Protection of intellectual property, patents, trademarks and other industrial property rights of Comarch
- Protection of Comarch's interests, in particular financial and legal
- Care for the high quality of offered products and services
- Risk management in the area covered by the policy
- Intellectual property and licenses management

Detailed objectives

The policies resulting from the primary objectives are:

- Protection of intellectual property of Comarch's suppliers and recipients
- Familiarizing Comarch employees with the policy and enforcing its compliance
- Achieving transparency of the rules of using intellectual property of third parties by Comarch employees
- Achieving the highest level of understanding and respect for intellectual property rights
- Prohibition of the use by Comarch employees and associates of software that infringes the intellectual property of third parties

Comarch aims to achieve the objectives of the Policy by training employees and acting in accordance with the procedures ordering the process of evaluation, selection and acquisition of software and storage of licenses for:

- Software for Comarch's internal utility and office needs
- Programming components and source codes for use in Comarch products
- Programming components and source codes for use in programming services implemented in such a way that Comarch's work effects become the property of the client (Comarch dedicated products)

Policy objectives are also implemented through activities under the certified Export Control System, in accordance with the procedures for foreign trade in goods, technologies and services of strategic importance for national security, as well as for maintaining international peace and security.

The duties of each employee and co-worker of Comarch include knowledge and observance of the Policy of Respect for Intellectual Property Rights and procedures resulting from it, to the extent to which they relate to them, i.e. in the scope of:

- Responsibility for using Comarch software
- Responsibility for using the software on Comarch hardware by an employee or co-worker
- The manner of obtaining consent for the use of intellectual property of third parties in Comarch products and Comarch dedicated products
- The manner of obtaining consent for the purchase of new software

# Policy of Quality of Medical Devices

Besides the core activities related to software and IT systems development and the provision of services in this area, Comarch also conducts activities in the field of production and marketing of medical products and services.

In terms of health and safety impact, all products, that is, medical devices created by Comarch S.A. and Comarch Healthcare S.A. are tested. These products are subjected to appropriate analysis and certification.

With a view to improving the quality of life and sense of security of our clients, and of protecting health, Comarch offers a wide range of products and medical services. Offered products are created as a response to market needs in the field of prevention and treatment, and are prepared on the basis of the latest technologies as a result of the cooperation of Comarch qualified employees with the scientific medical community. Comarch guarantees the right quality and safety of the offered products, professional and ethical service, as well as help and advice tailored to the individual needs of customers.

In order to implement the provisions of the Policy of Quality of Medical Devices, the Board and employees of Comarch undertake to:

- Adapt products and services to the expectations and requirements of clients, meeting the requirements of legal regulations in the scope of production and distribution of medical devices and provision of medical services as well as in the field of IT products and services
- Place products and services on the market that meet the quality and safety requirements
- Reliably inform about the quality and safety of the offered products and services
- Constantly and systematically take care of the quality and competitiveness of the offered products and services
- Develop cooperation with suppliers to improve the quality of offered products and services,
- Raise qualifications
- Constantly improve the efficiency of the quality management system for medical devices

The means of achieving the above objectives are implemented and constantly improved quality management systems developed and based on the requirements of:

- Directive 93/42/EEC Medical devices (MDD)
- EN-ISO 13485 Medical Devices standard. Quality Management Systems. Requirements for the purposes of legal provisions
- ISO 9001 standards. Quality management systems. Requirements



# Non-financial data reporting

The Comarch Group complies with local environmental legislation. Comarch consciously limits the impact of its operations on the natural environment, minimizing the consumption of natural resources and restricting waste generated as a result of operations. It also promotes an environment-friendly lifestyle among its personnel by running campaigns that encourage active participation in environmental protection, such as the voluntary signing of the "green declaration" by Comarch personnel. In May 2014, Comarch signed the "Declaration of Polish Business for Sustainable Development", thus assuring that it would take active steps towards the attainment of development goals set out in the 2050 Vision of Sustainable Development for Polish Business. The Declaration comprises 10 assumptions which, if implemented,

will enable us to live with dignity in the future and benefit wisely from the scarce resources of our planet. The environmental policy and procedures under the Integrated Management Systems put an obligation on Comarch S.A. to take active steps to curtail negative environmental impact. Using the implemented Environmental Management System compliant with the requirements of ISO 14001 standard, Comarch identified environmental aspects that it monitors, supervises and moulds. The 2017 Non-Financial Data Report was published on 29 April 2018. The document comprises non-financial information concerning Comarch S.A. and the Comarch Capital Group. The full report can be found on the website at: [https://www.comarch.com/files-com/file\\_276/Non\\_Financial\\_2018.pdf](https://www.comarch.com/files-com/file_276/Non_Financial_2018.pdf)

## Health and Safety at Work

### SURVEILLANCE AND INVESTIGATION SYSTEM

In the Polish companies of Comarch Capital Group, accidents at work are examined in accordance with the applicable regulations: Chief Health and Safety Specialist and Employee Representative. Reports on determining the circumstances and causes of accidents are approved by the Employer. The register of accidents at work and accident documentation are subject to archiving. The method of reporting and recording accidents is described in internal procedures developed on the basis of applicable legal requirements and the Comarch practice.

In all companies of the Comarch Capital Group so far, no fatal or serious accidents have been recorded, and there has been no suspicion of occupational disease. Neither have there been any accidents among Comarch subcontractors.

In all its branches, Comarch has a group of lifeguards with a total of about 100 people. Lifeguards are

employees trained in first aid and evacuation procedures. Every two years, lifeguard training is organized, aimed at refreshing and systematizing knowledge, informing about possible changes in the standards of first aid and organizational changes in the field of evacuation. Training is also designed to complement the number of lifeguards. Lifeguards have at their disposal means for first aid and instructions for providing pre-medical help. Instructions and checklists describing the rules of conduct during evacuation were also prepared. Lifeguards are volunteers.

Comarch S.A. and the companies of the Comarch Group do not have work positions where there are positions with exceedances of the NDN (maximum acceptable intensity) and NDS (maximum acceptable concentration, TLV, MAC, MAK). Neither are there jobs with an unacceptable level of occupational risk.

### ACTIVITIES OF THE WORKS COUNCIL

At Comarch S.A. and the Polish companies of the Comarch Group, no trade unions have been created. Therefore, a Workers' Council was established at Comarch S.A., operating on the basis of the Act of 7th of April, 2006, on informing employees and consulting them. Employees' representatives are selected from all employees employed under

a contract of employment. The selection is made by the employees of the Company every two years. Employees' representatives take part in, among other things, the analysis of accidents at work in accordance with the applicable legislation. In 2016, the employer consulted employees' representatives regarding changes to the work regulations.



The changes proposed by the employer were accepted unanimously by employees' representatives. There are no collective labor agreements in the Polish companies of the Comarch Group.

In foreign companies of the capital group in the DACH region there are no trade unions. However, there are works councils. Employees choose a works council for a given location, then all employees of a given location are subject to the given works council. The works council is not mandatory, the decision on the choice of council belongs to the employees. Not all employees can participate in the election. Limitations in the selection of the council are related to work experience. The elections take place every few years, as regulated by the provisions of the act.

Works councils in particular companies of the Comarch Capital Group in the DACH area:

- Comarch Solutions AG – Innsbruck
- Comarch AG – Munich
- Comarch Software und Beratung AG \_ Munich, Munster, Berlin, Hamburg, Hannove, Dusseldorf, Bremen, Drezno.

There are no trade unions in Comarch SRL (Italy). On the other hand, employees are subject to a national collective labor contract that was created to regulate the relations between employees and employers. It is collective because it affects all employees in the contracted and sectors, and because it applies to all companies that are located in Italy. It regulates the employment relationship, e.g. schedule, qualifications and duties, remuneration, etc. Comarch SRL is subject to 'CCNL del commercio' (trade).



Greening up Kraków - a joint initiative between Comarch and the parks department of Kraków city council



# 08

## Material events in 2018

## COMARCH SSE7 – A NEW BUILDING ON THE COMPANY'S CAMPUS

In January 2018, another Comarch building was commissioned in the special economic zone in Kraków. The office building has five overground storeys and its total surface area is over 27 thousand square meters. Additionally, the employees and guests have access to an underground parking lot for 157 cars and 86 bicycle spaces. The building was provided with photovoltaic panels and underground there is a position to charge electric cars. The facility commonly called "seven" has been granted a BREEAM certificate. This is a document that certifies that the office building was designed and erected in compliance with best green building practices and complies with the top standard of environmental protection and comfortable use.



## DATA CENTER IN FRANCE

Comarch started its first data processing center in France. The center has a surface area of 840 m<sup>2</sup> and is located in Lezennes, Lille, where Comarch has its French office. The Company's investment in its own infrastructure complies with corporate strategy and is related to the plans to expand business operations in France. The project will support Comarch with developing its ICT offer and ensure hosting of projects for existing and future customers in France.

## FRENCH INTERNATIONAL BUSINESS SUMMIT

Professor Janusz Filipiak, CEO of Comarch, attended the "French International Business Summit". The meeting was held under the patronage of Emmanuel Macron, France's President, and Édouard Philippe, France's Prime Minister. Professor Filipiak was the only CEO from a company in Central and Eastern Europe. The international conference with the motto "Choose France!" was aimed at demonstrating the potential of the country and encouraging foreign companies to invest in France. The summit was held on 22 January in Versailles and it was attended by about 140 top managers from all over the world. The French International Business Summit is termed as a "mini Davos", since many CEOs stopped there on their way to the summit in the Swiss Alps.

## STUDENT INTERNSHIPS

For 16 years Comarch has been organizing summer internships for students of IT and similar faculties. This is the largest project of the type in Europe. Every year, university students get trained for three months under the watchful eyes of tutors, and get involved in work on the development of solutions for Comarch customers. Almost 80 per cent of them decide to extend their cooperation with Comarch.

Similarly to previous years, in 2018 over 4 000 applications were received and over 400 students were invited to participate.





## 25TH JUBILEE OF COMARCH

Comarch began in Kraków in 1993. The company established by Elżbieta and Janusz Filipiak over a quarter century ago has become one of the largest in Poland, and is one of the most recognizable Polish brands in the world. The official celebration of the 25th jubilee of Comarch was held on 9 September at the Kraków campus. The jubilee was also celebrated by customers, partners, the academic environment, and friends. The event was an opportunity for the official opening of the SSE7 office building in the Kraków economic zone.

## COMARCH FORESIGHT SERIES CONFERENCE

4-5 May 2018 were two days filled in with detailed presentations, practical workshops and world-class entertainment. Heads of Comarch global sectors met their international partners and customers in Indiana, the US, at the Foresight Series 2018 conference. The meeting was attended by Comarch's most important business partners and prospects from global companies. The agenda of the event included a day of presentations, a meeting, and attendance at the Kentucky Derby, the oldest horse racing meeting, viewed from a private VIP lounge rented for the purpose.







## COMARCH USER GROUP CONFERENCE

Over 250 IT managers from all over the world attended the Comarch User Group conference. For more than a decade, the conference organized annually by Comarch has been gathering representatives of the largest global corporations. This year the conference was attended by representatives from all the continents. The motto of the 2018 international conference was Discover Innovations - Share Experiences, and covered two days of presentations and thematic workshops devoted to managing marketing campaigns, developing business models in the telecommunications sector, and the management of financial products and services for individual and corporate customers with IT systems.

## NEW COMARCH OFFICES

In 2018, Comarch opened offices in the Netherlands, South Korea and Mexico. The Netherlands is the third country after Belgium and Luxembourg in the Benelux region in which the Company now has branch. Administratively, the Company has been present in the region since 2006, when it was registered in Brussels. Mexico is another Latin American country where Comarch opened an office to carry on business activity related the to sale of systems for telecoms and financial institutions as well as solutions to manage customer relations and loyalty. The company in Seoul was related to an implementation project of one of the first 5G networks in the world.

# 09

## Corporate social responsibility

# Corporate social responsibility (CSR)

Socially responsible business largely relies on activities for the local community. Since its establishment, the Comarch Capital Group has been involved in social activities, propagating the idea of developing a broad social platform to promote sport and most advanced IT technologies. There are other important activities promoting healthy life styles and environmental protection, help for to animals, and support for culture and local community initiatives of local communities. The CRS foundations at Comarch constitute the basis in the area of corporate social responsibility a Code of Ethics has been approved and is maintained within the company. A detailed CSR report in the Comarch Group has been documented and presented every year in the corporate social responsibility report by the Comarch Group, accessible at: <http://www.comarch.pl/o-firmie/zrownowazony-biznes/csr/>.

Each year, the Comarch Group has seen increased commitment on the part of its staff to in CSR activities undertaken by the company. A dedicated email address has been established to report new issues in the area: [csr@comarch.pl](mailto:csr@comarch.pl).

## COMARCH FOR CULTURE

### Comarch to improve the quality of organ music in St. Mary's Basilica

Comarch is a co-founder of the overhaul of the organ and a revitalization project of music space in St. Mary's Basilica in Kraków. In 2018, the overhaul of the medium organ was completed. The instrument's original shine and noble tones were restored, and it can be heard daily during the liturgy in the Basilica. Now the main instrument is under construction. The project will be completed in 2020, on the 700th anniversary of the consecration of the church. Additionally, Comarch has been cooperating with St. Mary's parish for many years in the organization of St. Mary's Organ Festival – a cycle of summer music events held within the church walls. The Company would like the city in which its head office is located to continue developing as a meeting place of lovers of culture from all over the world.

### Classic events under the patronage of Comarch – Proms in Kraków

For the 17th time, Comarch sponsored the Last Night of the Proms concert in Kraków. The musical event has been organized since 1996. Previously it was dedicated to the British working in Poland, but over time it was transformed into an annual meeting of music lovers and business representatives and has become a permanent event in the city's cultural calendar. So far over 40 soloists from Poland and abroad performed before the audience in Kraków – between them, they performed more than 20 premier works. As stressed by the organizers, Last Night of the Proms in Kraków is a concert different from others. It combines top-flight artistes with spontaneous behavior by the audience members who join in with songs as a choir.

## COMARCH CARES COMPETITION FOR GRANTS

The #ComarchCares Grant Competition may be joined by Comarch employees and cooperating parties who, along with institutions (foundations, associations and educational institutions), wish to get involved in social activities.







In spring of 2018 two projects were carried out that were proposed in the autumn edition of 2017. The first is a cycle of workshops to make up for educational deficiencies among children and teenagers from dysfunctional families, carried out by a team from Warsaw. The other project was called Clean Air, and was run by a team from Łódź. It provided for the purchase of air filters to clean the air in kindergartens, and for educational workshops on environmental protection and health prevention.

In the autumn of 2018, another edition of the competition was decided, with two grants being awarded. These were Programming has a Future, by the team in Tarnów, and Programming - a Life Adventure, by the Poznań team. The projects are being implemented in 2019.

## SPORT AND A HEALTHY LIFE STYLE

For 25 years Comarch has been actively involved in programming an active healthy lifestyle and sport among teenagers and inhabitants of the Małopolskie Province, mainly by sponsoring the oldest Polish sports club. For 17 years Comarch has been the titular sponsor of the City Sports Club Cracovia. Additionally, the company has been popularizing a healthy and active lifestyle among its employees.

### Cracovia for children

Ice hockey and football players of Cracovia often visit educational institutions. Our athletes primarily visit primary schools and kindergartens. Additionally, football players often attend training within the Cracovia KIDS project aimed at propagating a healthy sports lifestyle among the young. At Christmas time, Santa Claus attended ice hockey and football games to hand over gifts to the youngest fans. The hockey action Bear Toss is always popular, with patients of the University Children's Hospital receiving many teddy bears from the ice hockey players of Comarch Cracovia.

Children's Day held in the stadium is a permanent element of the calendar. The Football Player Day is a new initiative organized for the first time in 2018. The event is also addressed to the youngest fans. Cracovia has been taking care of the safety of its youngest fans by organizing a Young Stripes Fan Zone in the stadium. Various games are organised in the zone under the watchful eyes of volunteers from the "Cracovia is Us" Association. The zone is often visited by Cracovia players who meet children, give autographs and pose for pictures. In order to propagate a healthy lifestyle among children, Cracovia organizes physical exercise classes and Stripes Classes. On healthy food day in 2018, athletes walked the city handing out apples to children.

### Cracovia for those in need

They have regularly supported the Noble Parcel action and the Great Orchestra of Christmas Charity. Traditionally, both football players and ice hockey players made their parcels within the Noble Parcel action. The athletes also lent support to a Cracovia junior footballer suffering from leukaemia. The players visited him in hospital and passed over gifts. On its website, the club published an appeal to donate blood for the junior. The action initiated by fans of Cracovia #PasyDlaPasów was very popular – it consisted of fundraising to collection to purchase annual entry tickets for fans who are in a difficult financial situation. The club joined the action and doubled the amount collected by the fans. Additionally, the club has been donating lots of gadgets for other charity actions.

### iMed24 as a partner of the Family Run and Capoeira workshops

The iMed24 Medical Center has been supporting events that propagate an active, healthy lifestyle. Therefore, it was the medical partner at the Family Run Kraków and Capoeira Martial Arts Workshop – Capoeira.







## ACTIVE COMARCH

In Poland, Comarch has been actively involved in promoting commuting on bikes to work in the spring and in the summer. That is why the employees have been made available such facilities as: bike stands, locked bike garages, self-service repair stations, dedicated change rooms and showers. Additionally, the company has been supporting occasional actions related to cycling.

In 2018, the Cycling Breakfast was held for the fourth time. Everyone commuting to work on bikes was provided with a healthy, delicious snack and information about how to prepare for a cycle trip. Additionally, the staff of the head office in Kraków could test bicycles to see which was most comfortable for commuting to work. Almost 700 people participated in the action in Comarch branches all over Poland.

Between July and September, employees of all Polish branches of Comarch could participate in three-month competitions: ComarchONbike and ComarchONrun. Each month, the participants had a different task to perform and the best were awarded attractive prizes – vouchers for sports shops. Over 180 employees were involved in the competitions. Over the three months, the runners covered almost 15 000 km, and the cyclists made 54 000 km.

In 2018, Comarch staff also attended (supported by the company) many external running events all over Poland (e.g. Business Run, Santa Claus Run, Run Warsaw and Kraków Independence Run) and in volleyball competitions (Volleyball Business League) and football competitions (Football Six League, Charity Football Tournament "Lublin IT for

Good Education"). Additionally, the people in the Kraków head office participated in Mundial Comarch (about a dozen teams, 200 players). Employees of the Comarch branch in Kraków and their families could enjoy the Recreation Center. The centre located on the Comarch campus and offering a swimming pool, gym and sauna.

## CHRISTMAS COLLECTION

In 2018, as in previous years, employees from Polish branches of Comarch got involved in organizing Christmas collections for those in need. Support was provided to about a dozen organizations and institutions, including, inter alia, St. Lazarus Hospice in Kraków, the Centre of Educational Institutions "Parkowa", the Foundation for Children with Cancer and Hospice for Children "Help Them", the Little Prince Hospice in Lublin, Wielkopolski Food Bank and Noble Parcel.







## WE GREEN KRAKÓW

Employees of Comarch and their families, once again contributed a green element to improving the condition of the natural environment and public space in Kraków. This year's action was the third joint initiative jointly with the City Parks Department in Kraków. The employees planted 200 hornbeam and chestnut trees in the Planty Park. Additionally, they handed over 500 pot plants to Kraków residents.

## COMARCH FOR EDUCATION

Since its establishment, the Comarch Group has actively cooperated with schools, universities, and other educational establishments. Initiatives are born in branches that are related to devoting their time to students at dedicated courses or occasional meetings.

Additionally, having many graduates of the AGH University of Science and Technology in Kraków among its staff, and having cooperated with the university for many years since the Company's inception, Comarch decided to support the 100th anniversary of the university.

Comarch raises awareness of ERP (enterprise resource planning) systems among universities and economic schools. This is done as follows:

- Lending Comarch ERP systems in educational versions (over 570 educational institutions provided with educational versions of Comarch ERP)
- ERP meetings and seminars for lecturers and students,
- Training for teachers on Comarch ERP systems

Additionally, Comarch has developed dedicated exercise books for economic schools to assist in professional exams for graduates.

## TRAINING PROGRAM

In 2018, the 16th edition of the Comarch summer internship program was held. The initiative, addressed in particular to students of IT and similar faculties, is an ideal opportunity to commence a career in IT and acquire valuable experience. Similarly to previous years, in 2018 over 4 000 applications were received and over 400 students were invited to participate. The trainees who began work at a Comarch office had an opportunity to see work on real projects with real customers, supervised by experienced specialists. After three months of paid training, almost 80 per cent of them decided to continue cooperation with Comarch. Working in small teams under the watchful eyes of mentors, the students had an ideal opportunity to compare their thoughts of work in IT with real life.

The program is also carried out by foreign offices of Comarch. In 2018, trainees joined the teams in Brazil, France, Germany and Italy. Some of them decided to continue working for the company.





## INNOVATION PROJECT

Comarch assists students in gaining valuable experience not only in the internship program. "Innovation Project" is an example of cooperation between a university and business. The idea is implemented by two entities – the Faculty of Electrical, Electronic, Computer and Control Engineering of the Łódź University of Technology and Comarch. For several weeks, selected students get an opportunity to work under the supervision of specialists at weekly meetings.

All the students were offered lots of knowledge and experience that Comarch specialists were willing to share. Additionally, at the end of the projects, the coordinators select two people who – to reward their hard work and commitment – will start a training in July under the summer internship program.

## COMARCH SUPPORTS YOUNG DESIGNERS

For the first time the company got involved in the Graduation Project – a review of the best diploma theses for people from the Visegrad Group countries. The review in 2018 covered 347 diplomas in 2D and 3D categories. A jury selected 3D projects to be exhibited. The diplomas will be presented in June 2019 at the European Design Festival in the Palace of Culture and Sciences in Warsaw, and in the autumn at Vienna Design Week. At the exhibition in Cieszyn Castle, awards in the form of paid internships at Comarch were handed over on the form of paid internships at Comarch.





# 10



**Prizes  
and rankings**

## AWARDS FOR COMARCH

For the third time, the editors of "Rzeczpospolita" granted awards to winners of the **Economic Patriotism Index. Comarch was awarded in the "Large company" category.** The ranking is aimed at rewarding Polish companies that make a particular contribution to the development of Poland and economic patriotism, and comply diligently with their duties to Polish society by engaging in dialog with the local community and taking part in multiple social and charity actions. The jury also appreciates the development of the company, its efforts to consolidate its position in the Polish market and abroad, diligent payment of taxes, creation of new jobs and R&D expenditures.

According to the authors of the "**Computerworld TOP200 2018**" report, Comarch was classified first in the categories for provider of IT solutions and services for trade, provider of integration services and provider of cloud services. Additionally, the company won the category of "IT companies with largest R&D expenditures" and "IT providers index for sustainable development".

Comarch was a winner of the Małopolska edition of the Wprost weekly competition. **The Company was awarded the 2018 Wprost Eagle Prize.** Wprost Eagles rank enterprises of enterprises generating the best financial results. The following criteria are taken into account: sales revenues for the last three years, net profit, profitability and solvency. The ranking covers the entire country and the galas are organized in provincial capitals.



Comarch was awarded the **Polish Eagle** prize in economy. The Company was awarded by Poland's Ambassador to Belgium for dynamic business development and active operations in that country. The award was granted for the first time. The idea of the Polish Eagle is to honor the enterprises that that, with their achievements, promote Poland as an innovative country with major economic potential.

In the ranking of the **most innovative companies in Poland, organized by "Rzeczpospolita"**, Comarch was ranked third. The report was made on the basis of questionnaires which covered data for 2018, inter alia, expenditures on R&D, the number of staff in R&D departments, structure of R&D expenditures and funding structure.

Comarch was awarded a certificate of **Pearl of Polish Economy in the category Great Pearls.** The Chapter granted the award to the Company for consistent implementation of its policies and strategy and its leading position among the most dynamic and effective enterprises. The event is organized by the publisher of the English-language monthly "Polish Market" and the Warsaw School of Economics is a partner.

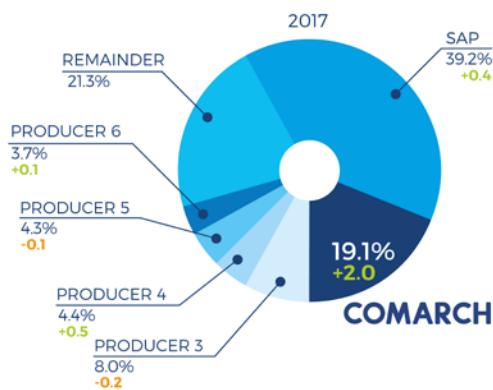
**According to the recent report "Poland Enterprise Application Software Market 2017"**, developed by IDC, Comarch increased its share in the market of ERP providers by 2 per cent, reaching 19.1 per cent. The Company had the highest growth of sales among all providers and shortened the distance to the first producer in a general classification, covering both Polish and foreign companies. Among Polish providers, Comarch continues to be the leader. Once again, Comarch is the largest provider of ERP solutions to small and medium-sized enterprises (with headcount up to 499 people). According to IDC data, Comarch has a market share of almost 31 per cent. The next largest company has a market share of 20.6 per cent in the segment.







Rozdanie nagród rankingu IT@BANK 2017



The position of Comarch ERP in the Polish market according to the report: "The Enterprise Application Software Market in Poland: 2017-2021 Forecasts and 2016 Vendor Shares"

Comarch was classified first in the "development potential" category and second in the **IT@BANK main ranking**. Once more Comarch was appreciated by the jury of the annual IT@BANK ranking for the best software and service provider to the financial sector. In all, 48 companies participated in the competition and they were assessed, inter alia, for their revenues, number of staff and customer portfolio volumes.

The **"Best Trade Finance Services"** was awarded to the IT solution for trade financing developed by Comarch and ING Bank Śląski. The publisher of Global

Finance identifies winners on the basis of the following criteria: effectiveness of attracting and servicing digital customers, proportion of customers using the digital offer, increase of the number of digital customers, extent of the product offer, benefits stemming from digital initiatives, and design and functionalities of web/mobile sites.

At the global loyalty conference for the travel industry – The 10th Annual Loyalty Conference & Awards in Bangkok, **Comarch won the main prize in the Best Supplier Initiative category. Comarch Social Mining solution was awarded**. The winners were selected in two stages. First a commission of experts from the aviation industry reviewed all submitted solutions. When a shortlist of three finalists had been produced, each was offered an opportunity to present their solution to the conference audience. The presentation was to convince the audience to select the solution since it was their votes that selected the winner.

Comarch was awarded a special prize at the **Italy Protection Forum for disseminating innovations in the insurance sector in Italy**. Italy Protection Forum (IPF) is an annual event devoted to social, health and life insurance, held under the auspices of the EMF Group, a consulting company specializing in financial services.

## AWARDS FOR COMARCH EMPLOYEES

### The title of the "CEO of the Year" for Professor Janusz Filipiak

For the 24th time, the editors of "Parkiet" granted "Bull and Bear" awards to the leaders of the capital market. The title of the "CEO of the Year" was awarded to Professor Janusz Filipiak. The Chapter awarded Professor Filipiak for consistent development of Comarch for 25 years.



## COMARCH IN REPORTS OF ANALYTICAL COMPANIES

Comarch ECM was awarded in the most recent report by Forrester: **"Now Tech: EU And UK-based Enterprise Content Management, Q2 2018"**. Comarch is one of 12 enterprises that qualified in the **"Midsize" category**. The report focuses on companies providing enterprise content management (ECM) services that increase their staff commitment, enhance customer experience and are compliant with local and international law. According to the report, the core advantages offered by ECM solutions by Comarch include cooperation and secure file availability not only in popular office formats but also via multimedia. With the specific applications for content management and processes, the Comarch solutions resolve specific problems.

Comarch was included in the most recent research report by Forrester titled **"Now Tech: Loyalty Marketing, Q4 2018"**. Forrester, entitled providers on the basis of their market presence, functionalities of solutions and services offered by them. Overall, Forrester presented 36 providers of various sizes, potential, geographical location and market orientation.

Comarch E-INVOICING was covered in the most recent report by Forrester: **"Now Tech: Content Platforms, Q3 2018"**. Comarch is one of 14 companies qualifying in the "Small vendors" category with such enterprises as Amazon or Xerox. The report states that the Comarch solution is used primarily in retail markets, FMCG and in production with CEMEX, Valeant, IGEPA and Technicolor among the major customers to have implemented the solution.

Once again Comarch was classified as one of the best providers of loyalty solutions. The report **"The Gartner CRM Vendor Guide, 2018"** focused on the contemporary landscape of CRM software. Gartner selected 23 providers from all over the world, including Comarch, which have an integrated vision to combine loyalty, customer winning and retention with multi-channel marketing. Comarch was the only Polish company in the report. Apart from a distinction for loyalty solutions, Comarch was also listed among the best providers of FSM (Field Service Management) applications.

Comarch Procure-to-Pay, enhancing procurement processes in enterprises, was appreciated by Gartner analysts and had its début in the most recent report: **"Magic Quadrant for Procure-to-Pay Suites 2018"**. The report mentions 10 international providers, including Comarch, so that enterprises are supported in their choice of the best solution for their profile. Comarch was highly placed in the "Niche player" category; the company is approaching the position of "Challenger".

Comarch e-Invoicing software: **"Checklist for Invoice Compliance in Procure-To-Pay Processes"** was listed in the most recent report by Fintech as **"Barometer for 2018"**. E-invoicing trends in P2P processes were reviewed by international organizations that have the aim of improving data accuracy as well as of accelerating and automating invoicing processes. The report, entitled "B2B Fintech: Payments, Supply Chain Finance and E-invoicing Market Guide 2018. Insights Into the B2B Payments, Supply Chain Finance and E-Invoicing Market" includes studies by specialists from global and regional companies that present theoretical research and practical applications of the recent management methods in B2B processes. Among several dozen texts, there is a study by Bartłomiej Wójtowicz, Product Development Manager of Comarch e-Invoicing.

Forrester analysts also appreciated the Comarch B2B Network solution in the report: **"Vendor Landscape: B2B Business Networks, 2017 To 2018"** which presents solutions providing for effective and secure data exchange in the entire supply chain. This is yet another award for the Comarch system. Earlier, Gartner listed the Comarch software in its report: "Magic Quadrant for Integration Brokerage".

Gartner listed Comarch in its report: **"Market Guide for CSP NFV Management and Orchestration Solutions Report"**. The solutions of NFV MANO (orchestration on virtualization management of network functions) include functionalities that support telecoms in their development of virtual networks, network infrastructure and services, and in managing the functionalities. The report describes the market, analyses the objectives and requirements of telecoms and contains a detailed description of the solutions proposed by them.



# 11

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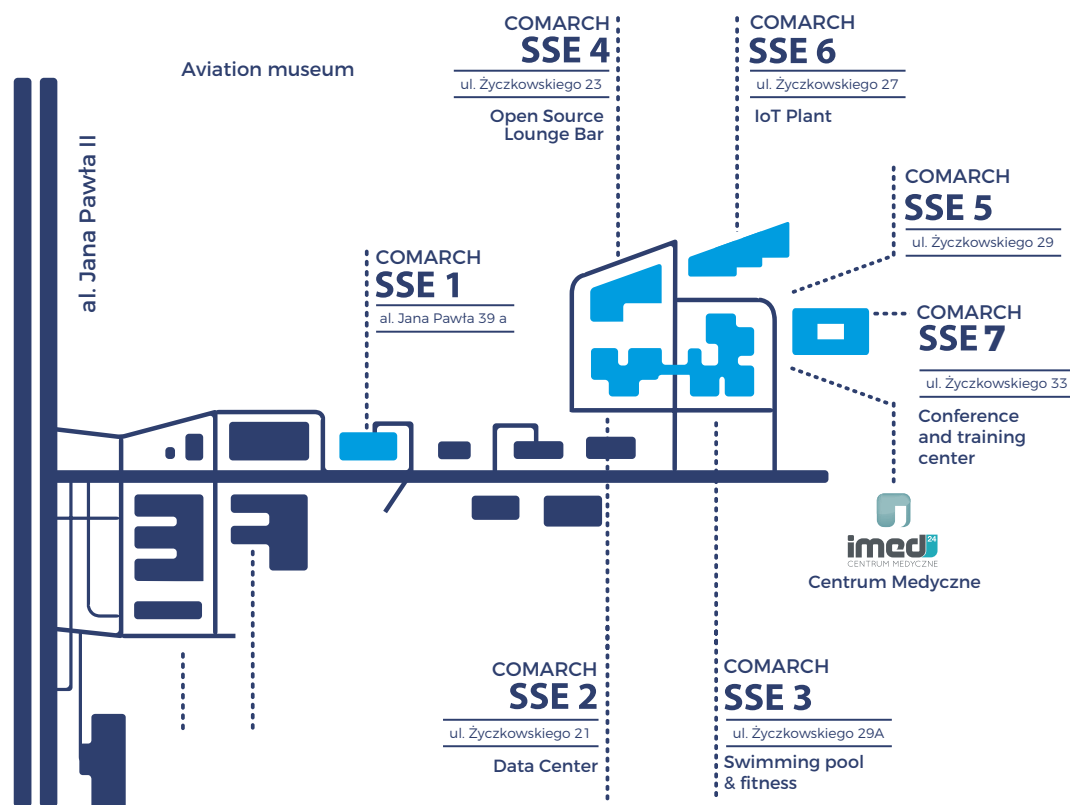
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