Made in Ukraine 4.0

Overview of potential and innovators of industrial hi-tech sectors from Ukraine

Discover ukraine 4.0

Ukraine is well known in Europe for qualified, affordable and available IT staff. With about 100.000 IT-developers today ranks No1. IT-destination in Eastern Europe. At the same time almost nobody knows about industrial high-tech solutions "Made in Ukraine".

In former USSR Ukraine was the country with highest concentration of scientists, developers and industrial centers. Unfortunately, during last 25 years the country lost most of its potential. However, Ukraine still remains good position in many industrial hi-tech sectors. For example, it ranks in top 8 countries worldwide able to ensure complete cycle of aerospace manufacturing, it is in top 5 world producers of tanks, and it has also strong position in manufacturing of heavy industry and power equipment, complex engineering and turn key projects, and other sectors.

In 2016 Association of Industrial Automation of Ukraine together with Association of Innovation Development of Ukraine formed a national movement 'Industry 4.0 in Ukraine'. The movement was positioned as the common platform for all hi-tech segments but moving at the 1st place IT-industries and technologies. Today we unified >60 companies and made a lot of promotion of world concepts like Industry 4.0 and Industrial Internet of Things. In 2016-17, we gathered a lot of information about current status & potential in industrial hi-tech segments in Ukraine and formed our first pool of' innovator 4.0', means companies able to provide modern products and solution based on concept of Industrial

So, in this overview we would like to present the Ukrainian potential in the segments driven by Industrial Automation and IT segments.

With regards to expectation of our German partners we believe that Ukraine has good opportunities to grow together with main options as

1. The highest in Eastern Europe number of developers and excellent ratio of quality/price

2. We are already integrated into global markets with 100+ international centers R&D. It means that we follow global trends including such in 4.0/IIoT domains and ready to be a part of global value chains in many industrial hi-tech segments

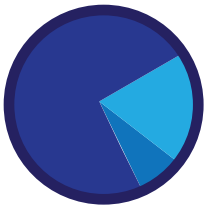
3. We quickly develop strong local ecosystems per different hi-tech segments. It already exists in IT sector and we push other hi-tech segments to develop it.

Let us discover Ukraine 4.0 in more details.

Key facts about Ukraine

Location : Eastern Europe

Population : 45 million



IT as a share of national export : 4 %

Capital : Kyiv (3 million people)

Workforce : 22 million

Currency : hryvnia (UAH)

Timezone : UTC +2

GDP per capita : $ 3,900

Top 5 tech hubs : Kyiv, Kharkiv, Dnipropetrovsk, Lviv, Odessa

THE NATIONAL MOVEMENT ‘INDUSTRY 4.0 IN

In July 2016 first 18 companies joined to national movement ‘Industry 4.0 in Ukraine’. They included the subsidiaries of worldwide companies as Microsoft, HPE and ABB, big local industrial End Users and local System Integrators. Today the movement includes 65 members and it is still non government initiative managed by Association of Industrial Automation of Ukraine. The main statements of movement are fixed in the Chapter ‘Industry 4.0 in Ukraine’. They are as follows

- Ukraine should remain and grow its position as hi-tech developed country. There is a lot of focus in the Chapter on this positioning as opposed to current trend of becoming agrarian country.
- IT-industry is recognized as leaders in term of technologies as well as business practices
- It should be much better integration into worldwide & EU movements, as examples it cited the German Industrie 4.0 and US Industrial Internet Consortium.
- Market education and development of digital transformation roadmap per industry is fixed up as main priorities in short term period.

The movement is positioned as the common platform for all industrial hi-tech sectors, the membership is free, it is enough just to share the same principles and vision.

Later the movement became the main holder of Smart Factory part in pro-government initiative Digital Agenda Ukraine. In may 2017 first strategic initiatives were integrated into the mandate of Cabinet of Ministers of Ukraine. Mainly, they concern of development of National Strategy 4.0.

To summarize, from July 2016 to July 2017 organizers made 3 national conferences, issued several white paper, created own Technical Committee, regular communication channels (incl. new web-site, http://industry4-0-ukraine.com.ua/) and have been integrated into Government programs.

Many local subsidiaries of German brands joined to ‘Industry 4.0 in Ukraine’, they represent Siemens, Bosch, Phoenix Contact, FESTO, Rittal, Kaeser Kompressoren and others.

Association of Industrial Automation organizes conferences and round tables almost every quarter. Photo shows the panel discussion from the conference ‘Connecting IT & OT’ from December 2016.

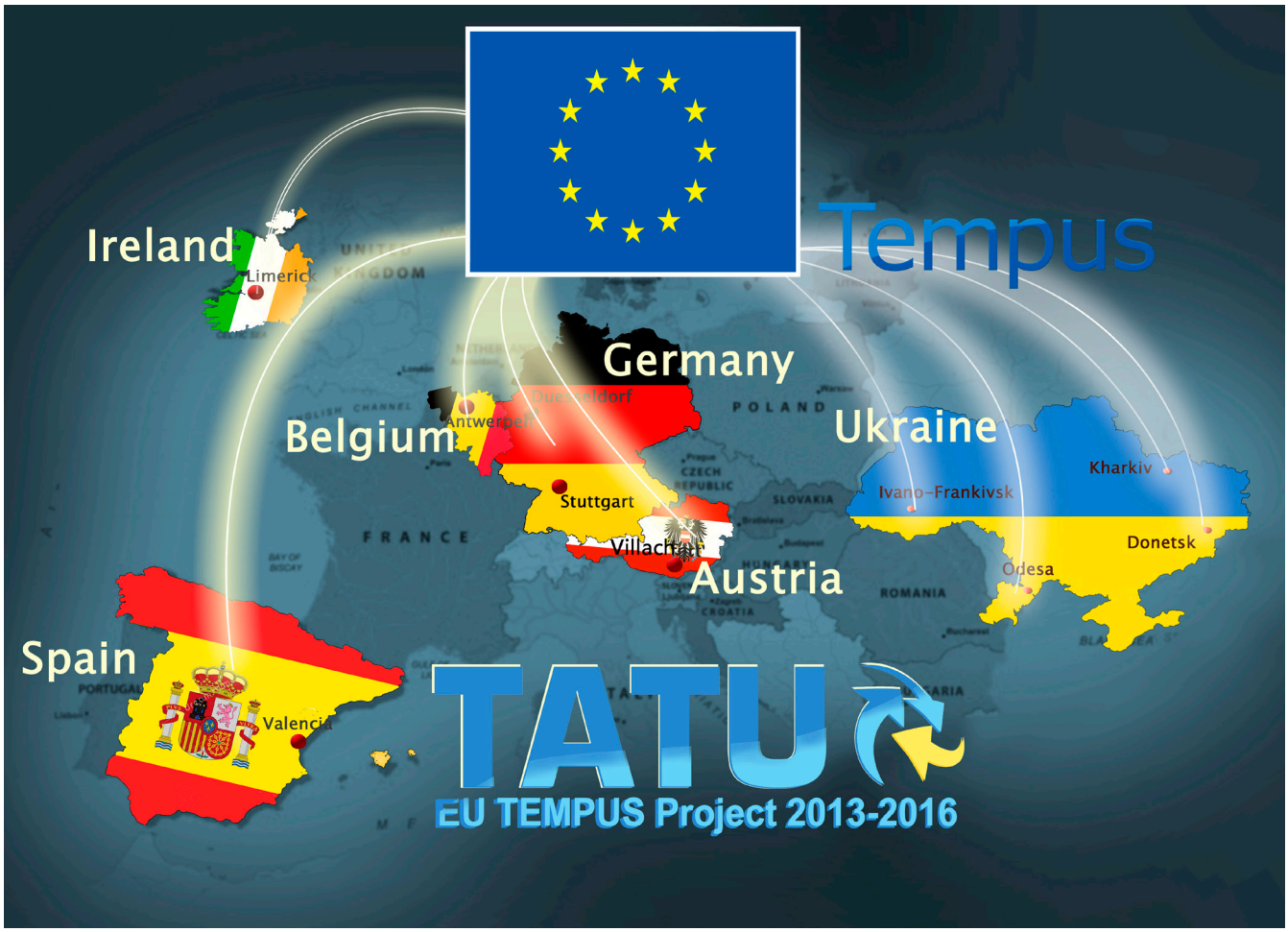
ECOSYSTEM OF INDUSTRIAL HI-TECH MARKETS IN UKRAINE

Ukraine still survives difficult decades of national self-identification and break with post Soviet (Russian) imperia. Because of non effective last governments and slow reforms, absence of Industrial and Innovation strategies at State level, many liaisons among players in industrial hi-tech segments have been totally broken. Many industrial sectors operate today as totally self-regulated by market that makes them very vulnerable in term of global competition, price conjunction and lack of capital.

When machine-building sector could not survive the break of export to Russia and CEE countries and drop down 3 times since 2013, other assets are still strong and attractive and demonstrate good changing dynamic.

1. IT sector is champion of growth with 25-30% of CAGR and it is presented separately on the page 6-9

2. Ukraine's technical education is the foundation of Ukraine's hi-tech ecosystem. Every year the country graduates over 150,000 of students, among which 36,000 are with degrees in technical studies, including some 15,000 IT specialists. Ukraine's army of more than 90,000 IT professionals makes the country a leader in Central and Eastern Europe by the number of engineers and the number of graduates emerging into the labor market. It's absolutely clear that current capacities of Education System significantly exceeds the demands of local industry, So, being the European country with the lowest per capita GDP, Ukraine continues to be a donor of well educated young people for wealthier countries. This is the price for having non-effective governments during two decades. But by taking a more pragmatic approach, it's easy to conclude that this creates great opportunities for international companies searching for young talents, as well as for neighboring European countries.



The EU project Training in Automation Technologies for Ukraine (TATU) is an EU project in the Higher Education during 2013 - 2017. TATU aim is to enhance the employability of university graduates and Life long Learning (LLL) in the field of industrial automation by the introduction of European standards of education through practical examples. The TATU aims to build 5 training centers in each Partner university ready to provide certified trainings in different fields of industrial automation for UA students and young specialists from the enterprises. All UA universities are leading in the field of automation technology in different industrial fields (manufacturing processes, automation technology in maritime transport, coal, oil and gas industry, electronics, etc.). The TATU consortium consists of 6 EU partners, 5 UA Universities and a Ministry of Education and Sciences of UA.

3. Ukraine is the home to around 150 qualified Control System Integrators, Panel Builders and Process Design bureau (institutes) covering major industries like Energy Generation & Distribution, Metal & Mining, Food & Beverages, Chemistry, Oil & Gaz, Construction materials, etc.

4. Ukraine still has strong scientific potential. National Academy includes 160 Institutes with > 31 thousands of researchers. Even being degraded last years, many assets, works, studies and staff are very valuable in term of scientific level, staff availability and price.

5. Ukraine has huge and still not realized potential of manufacturing. More and more companies start to move the manufacturing facilities from China to Ukraine due to reasons of cost and proximity to EU.

Since 2016 new Dutch assembly plant of Banke Electromotive operates near to Lviv, Western Ukraine. Banke Electromotive is a technology provider that develops and builds 100% electric heavy duty vehicles. Company strengths are in the development and industrialisation of power electronic solutions, large-scale battery packaging and battery management systems. Rasmus Banke, operating director says that they were looked for available, qualified and not expensive workforce since a long time though Eastern Europe and have finally chosen Ukraine. Mr. Rasmus Banke recognizes that at the beginning they have had problems to find right engineers but just they have adapted HR tactics it worked. 'Ukraine has great potential as cheap and close to EU country with good conditions to start manufacturing', says Mr. Rasmus Banke.

Banke
ACCESSORY DRIVES

IT CLUSTERS AND ASSOCIATIONS

IT is the most prominent industry in Ukraine when you are looking for talents, staff and innovations. With 25% CAGR and 3% of GDP, Ukrainian IT industry includes nearly one thousand companies and 100,000 programmers which serve to many international markets, while global players operate no less than 100 R&D centers across Ukraine. Key facts and stats about IT in Ukraine (source

Ukraine has the largest number of IT professionals in Central and Eastern Europe(putting aside Russia); its IT engineering work force is expected to double to over 200,000 by 2020.

Ukrainian outsourcing companies offer a wide range of engineering capabilities, with most companies having already switched to agile development over the past few years.

The export volume of Ukraine's software development and IT services reached at least $2.5 billion in 2015, showing double-digit growth year after year. The US market is the main destination with an estimated 80% volume of exported services.

The country's political turbulence has had little impact on the existing activity of most industry players, but remains an obstacle to stronger growth. The industry has the potential to reach a completely different order of magnitude, given the size and quality of the country's workforce, should reforms succeed and new strong players emerge.

English proficiency level among IT professionals has grown significantly over the past few years, but remains lower than that of some other CEE countries.

The key IT associations and developing funds in Ukraine are the next

Association of IT-Ukraine, http://itukraine.org.ua/

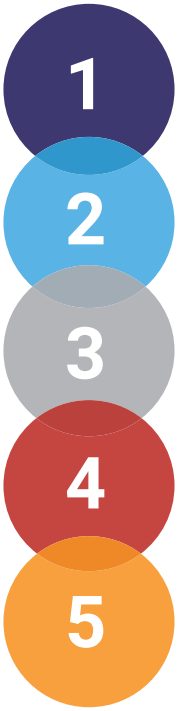
Association of IT-enterprises in Ukraine, http://apitu.org.ua/

Association of venture capital and direct investments, http://uvca.eu/en

Internet association of Ukraine, http://www.inau.org.ua/

To find more quality analytics about IT-sectors, see http://www.uadn.net/it-report-visual

Key Findings: Pre-release 210-pages research "Rise of the Technology Nation"



Ukraine has the largest and fastest-growing number of IT professionals in Europe

Ukraine IT engineering work force is expected to double to over 200,000 by 2020

Ukrainian talent can offer a wide range of engineering capabilities

US market is the main destination for Ukrainian IT firms, with an estimated 80% volume of exported services

Over the past year, Ukraine has significantly improved its status in international business venue rankings

Ukraine has the long history of country of innovation and now it is unleashing its potential in IT space, again

Source: Rise of Technology Nation. AdVentures Capital

Ukraine in international rankings

Outsourcing rankings

1st

Outsourcing Market in Eastern Europe

OUTSOURCING JOURNAL SHARED KNOWLEDGE FOR DACH & GLOBAL MARKETS

1st

In CEE by the number of engineers and number 4 globalle

Colliers INTERNATIONAL

1st

In CEE by outsoucing volume

CEEOA Central and Eastern European Outsourcing Association

Global innovation rankings

Top 50

Most Innovative Countriess

THE BLOOMBERG INNOVATION INDEX

13th

In Science snd Technology

The Good Country Index

2nd

Most Master Level Certifed Nations

BENCH GAMES 2013

Leading research firms about Ukraine

Top 30

World Outsourcing Destinations in 2010-2014

Gartner

Top 20

Offshore Locations in IMEA

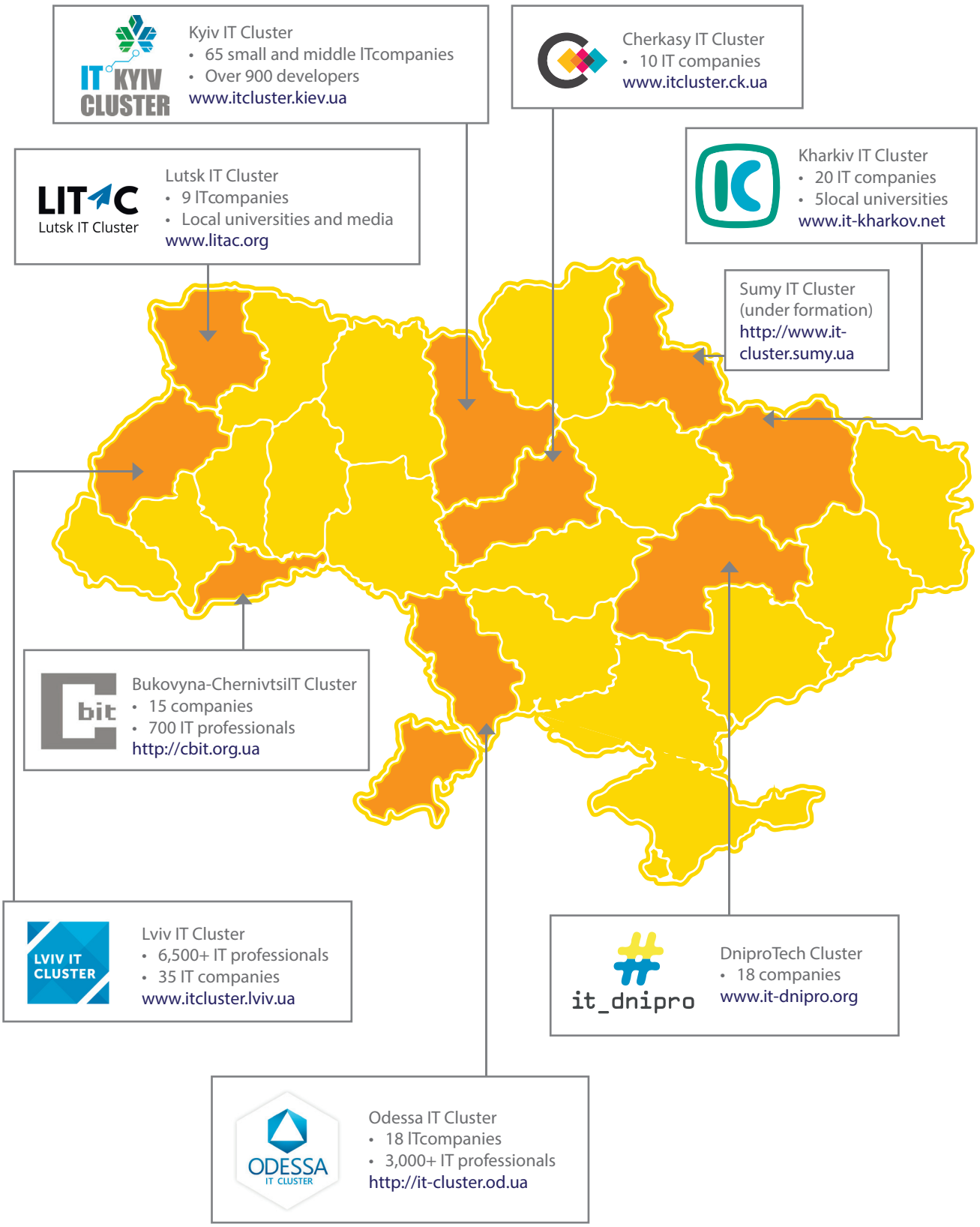
Gartner

Top 50

In Outsoucing Activities

ATKearney

Source: Rise of Technology Nation. AdVentures Capital



Source: Rise of Technology Nation. AdVentures Capital

Association of Industrial Automation of Ukraine

АППАУ

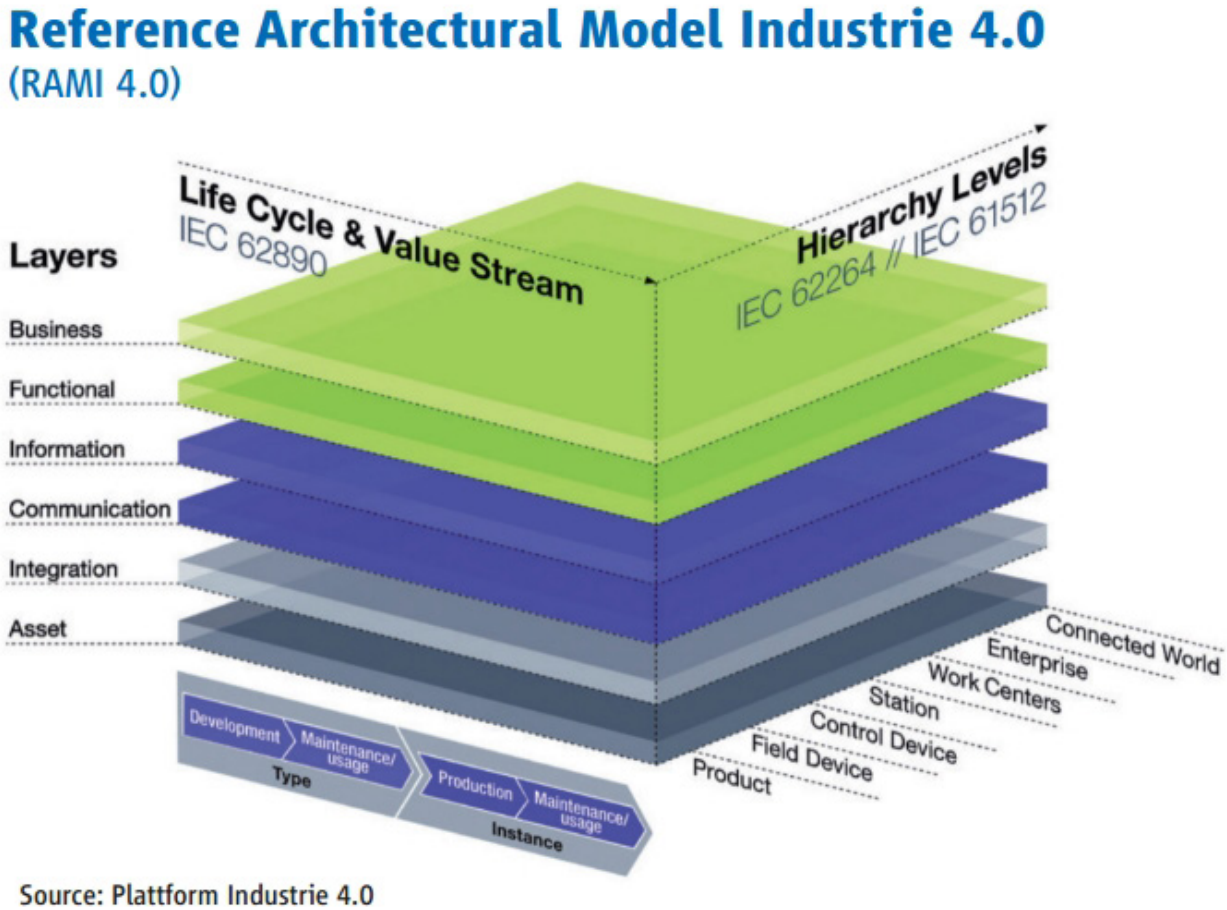
Association of Industrial Automation of Ukraine (APPAU) unifies 40 permanent members who provides solutions and services in the area of Industrial Automation and IT. That number includes big international vendors like Siemens, Schneider Electric, Bosch, Festo, Phoenix Contact as well as many local System Integrators, Universities, Manufacturers and OEMS.

APPAU sees its mission in developing the local market through performance of three roles:

- Acceleration in the process of harmonization with international standards in the field of Industrial Automation (ISA/IEC/ISO). APPAU created its Technical Committee and makes information & marketing campaigns to promote the standards, train specialists, and to advocate local validation of the standards
- Facilitation of dialogue among main players (end users, system integrators & OEM, vendors, R&D centers and academia) in order create common clear goals and roadmaps of modernizing local manufacturing industries
- Developing total ecosystem though finding right partners and creating with them new value-added services around missing elements and gaps in local market infrastructure. Typically, new partners and new services close market gaps in marketing & market research, education & training, innovations, standards etc.

In 2016 APPAU was the main initiator and founder of national movement 'Industry 4.0 in Ukraine'. APPAU welcomes foreign partners of different kind and provide them marketing and information services.

For more information, contact info@appau.org.ua



Source: Plattform Industrie 4.0

Association of Industrial Automation organizes conferences and round tables almost every quarter. Photo shows the panel discussion from the conference 'Connecting IT & OT' from December 2016.

INNOVATORS 4.0

We present here all innovators in their classical segments as the next

- Process Engineering company. Typically, a firm in this segment manages full lifecycle of manufacturing process, starting from design and commissioning, including Automation part.
- OEM (machine-builder) manufacturers machines and process lines.
- Local electronic manufacturers provides local production facilities and electronic products for industrial applications
- Control System Integrator typically provides full range of services in Control System
- Industrial IT Developer and System Integrator deals with IT part in Manufacturing, means in vertical integration (MES/MOM – ERP) and horizontal integration (different SW products through value chain).
- New IoT startups go to market with SW & HW web & internet-enabled products
- Research institute provides services in scientific field.

THE BIG INDUSTRIAL PROCESS ENGINEERING AND CONTROL SYSTEM INTEGRATORS

TECHINSERVISE Manufacturing Group, the leading Process Engineering & OEM company

New modern sugar plant build by Techinservice MG in Algeria, 2015-16 for French group Cristal Union. All process equipment, Process Automation systems are designed and commissioned by Techinservice MG.

Techinservice Manufacturing Group is a leading Process engineering and machine-building company with headquarters in Kyiv. Established in 1993 for development and implementation of sophisticated process engineering projects in different industrial sectors. Techinservice MG has its own scientific and research office, design engineering department and manufacturing facilities (machine-building plant).

The Group includes also Techinservice Intelligence department engaged in development and implementation of integrated solutions and services for automation of technological processes and production, as well as building and infrastructure automation and management systems.

For over 23 years of operation Techinservice Manufacturing Group has implemented more than 200 successful projects of different scale both in Ukraine and foreign countries - in Algeria, Armenia, Belarus, Bulgaria, Czech Republic, Germany, Hungary, Latvia, Lithuania, Poland, Russia, Serbia, and Slovakia. The Company has its representative offices in Bulgaria, Russia and Czech Republic. Techinservice is a byword for innovative process equipment, state-of-the-art automation solutions, integrated turn-key solution design and implementation approaches for whole plants and enterprises.

For more information, see http://www.techinservice.com.ua/en/

TECHINSERVISE Manufacturing Group, the leading Process Engineering & OEM company

RWA
RAILWAYAUTOMATIC
DEVELOPMENT
DESIGN
SUPPLY
CONSTRUCTION

Zaliznychavtomatyka LLc (RailWayAutomation, RWA trademark owner) traces its history to 1999 when the team developed and introduced the first microprocessor train traffic control system for companies of the South Western Railway (Ukraine). Today RWA is the biggest in the railway industry Control System Integrator that successfully operates in Ukraine and CIS countries. Company has developed and implemented technical solutions and dozens of different management systems for companies of «Ukrzaliznytsia», subways of Kyiv, Kharkiv, Dnipropetrovsk, Moscow industrial enterprises and transport Ukraine and CIS countries.

RWA systems are adapted to the modern railway and subway operating rules. We have experience and we know what to offer to you. We have developed certified solutions that have been in none failure and trouble free operation for more than 17 years. They do not require extra payment during service andmodernization. Most of your employees have necessary level of education, knowledge and experience.

For more information, see www.rwa.com.ua

Elius-M. The Control System Integrator making equipment smart

ELIUS-M

ELIUS-M Llc from Sumy has typical profile of Control System Integrator. Company was founded in 2008, combining staff of industrial automation specialist with 30+ years of experience. Now they are 35 people and company has tens of references in oil and gas, energy, food, construction materials production, as well as innovative technologies development. In 2016 ELIUS-M invested into R&D in predictive maintenance based on Industrial Internet of Things (IIoT).

Predictive maintenance is much more effective compared to preventive and can reduce maintenance and downtime costs up to 10 times. Their first application is in motor's control domain.
The special hardware module measures and makes analysis of motor's torque that allows to estimate current state of the mechanism.

Collected data then goes through several mathematical methods of signal processing such as digital filtering, spectral analysis, etc. Resulting set of parameters goes to a neural network input, which uses machine learning algorithms to estimate how much current state of the mechanism differs from the ideal. After exceeding certain threshold system can notify stuff to make a technical inspection and helps make further decision about maintenance.

So far, EIIUS-M developed the powerful tool for industrial predictive maintenance. They say that motor torque analysis technology can be used on its own or in combination with other known methods such as vibration and temperature analysis, in this case prediction accuracy may be improved.

For more information, see www.elius.com.ua

AZOV CONTROLS, the leading Process Engineering and Control System Integrator in Metallurgy

TERAWATT GROUP
The Art of Engineering

«Azov Controls» LLC provides services in the design, supply and commissioning of industrial automation systems, including instrumentation, process control systems, electrical equipment, power supply, safety based on worldwide brands as Rockwell Automation components, Schneider Electric and Siemens. Since 2014 Azov Controls LLC (Dnipro, Ukraine) is a part of TeraWatt Group companies, which also includes the companies which also includes the companies LLC «M Technology» (Kharkov, Ukraine), LLC «Automation» (Mariupol, Ukraine), TeraWatt Solutions GmbH (Dusseldorf, Germany). In addition to industrial automation, the activities of TeraWatt Group cover such industries as the design of metallurgical processes, circulating water supply cycles, treatment facilities.The total number of employees of TeraWatt group companies is 130 people.

This is the typical visual wall in Control System installed by Azov Controls in steel plants through Eastern Ukraine.

The total number of employees of TeraWatt group companies is 130 people. The volume of sales of goods and services of the group of companies for 2016 is more than 4 million euros. A significant part of the business is the implementation of projects in subcontracting with German and European companies, including the development of project documentation, equipment supply, commissioning. Azov Controls provides the commissioning of their own projects, projects of third-party developers both on an hourly basis and on the principle of fixed volume. The presence of German company within the group of companies provides an appropriate level of interaction with European customers, including insurance, finance, etc.

One of the most interesting solutions offered by TeraWatt group using the Industry 4.0 concept is blast-furnace cooling system with the use of copper cooling staves and high-conductivity linings. During 2015-2017 our group of companies implemented 4 such projects. The most important part of the package is a control system based on the Industry 4.0 concept. This system provides automatic regulation of the cooling system operation depending on the current heat loads of the blast furnace, as well as an expert module, which provides extended information on the state of the cooling plates, lining, peripheral furnace movement, etc.

For more information, go to www.terawatt-group.com www.azov-controls.com

Industrial IT Software Developer and System Integrator

IT-Enterprise, the IT Software Developer and System Integrator

IT-Enterprise is Ukrainian company producing enterprise software and business management applications. Founded in 1987 in Kyiv.

- More than 200 000 users
- 300+ projects in different countries
- Clients include Antonov, Interpipe, Ferrexpo, Roshen, etc.

IT-Enterpise ERP system uses advanced mathematical technics and Industry 4.0 concepts. The system provides optimal management for all aspects and functions of large and medium-scaled enterprises. The company also has a cloud-based solution for SMB named Clobbi.

Some of the latest developments by IT-Enterprise are:

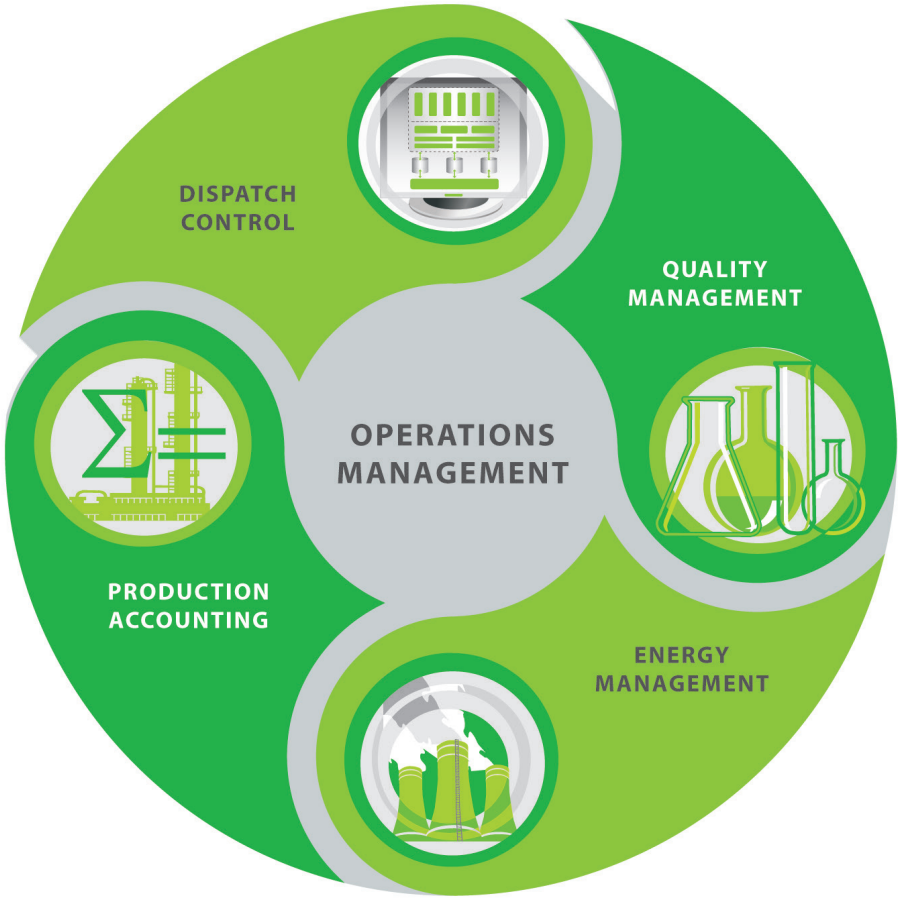
- IT-Enterprise SmartFactory Industry 4.0 solution – the new generation APS system that provides real-time management of customer orders execution. Thanks to the introduction of SmartFactory, equipment downtime can be reduced by 30-50%, and the productivity of technical personnel due to automation increased by 45-50%.

- IT-Enterprise SmartEAM is an Industry 4.0 system that provides reliable equipment operation through the use of effective preventive maintenance techniques based on statistical analysis methods (RCM2). Thanks to the introduction of IT-Enterprise SmartEAM, large Ukrainian manufacturing companies reduced the cost of repairs by 8%, increased the availability of equipment by 15%, and reduced emergency accidents by 22%.

Indusoft, the leading Control & IT System Integrator, Software Developer.

InduSoft

InduSoft-Ukraine has main profile of Control and IT System Integrator. The company was founded in 2003, they are located in Kiev, Ukraine. InduSoft delivers integrated automation systems on the basis of advanced information technologies, software and hardware. The company has an extensive implementation experience in various industries: oil and gas, chemicals and petrochemicals, metallurgy, energy, etc. InduSoft's experts have developed standard industry-specific solutions which fulfill the following functions: management and operational control, reconciliation of material,



component and heat balances, metering of specific energy consumption, monitoring of equipment, analysis of actual production performance, etc. All experts are recertified annually to provide high-quality project implementation. Solutions delivered by the company are thoroughly architected to ensure high reliability and maximal performance.

Software Development is second profile of Indusoft.

nduSoft develops its licensed software according to the up-to-date international standards. Experienced developers and the efficient software development project management allow the company to implement sophisticated software solutions'. InduSoft is Microsoft Gold Certified Partner in the Application Development competency. This status confirms compliance with the requirements for Microsoft partners.

For more information, contact info@indusoft.com.ua

The local electronic manufacturers

Novatek, the local manufacturer of control devices and IIoT solutions for remote monitoring and control

NOVATEK ELECTRO
ISO 9001

Having over two decades of experience in Electrical Engineering, Novatek-Electro LTD has gained trust from Ukrainian, Russian, Poland and Indian industrial businesses. Since inception, Novatek maintains development and manufacturing cycle of the line-up of the controllers and hardware modules. These devices help with solving numerous automation tasks in a wide variety of industrial fields. To assist our clients and simplify equipment control processes Novatek develops cloud-based remote monitoring platform named Overvis. It is freely accessible to all customers of our controller devices.

Today Overvis platform includs large portfolio 'ready-to-use' solutions like :

- Overvis Ice: protection and control of industrial refrigeration equipment.
- Overvis Streetlight: street lighting remote programming with protection of operating parameters, for municipal infrastructures.
- Overvis Motor Control: remote control and operation protection of AC electric motors.
- Overvis Pump: single control point for a distributed pump systems and precise automation of pumping solutions.
- Overvis Heat: heating and climate systems control panel.

And still many others. It's worth mentioning that since all these solutions rely on the
same cloud software platform, it is easy to combine them and support multiple distributed industrial objects under a single account.

For more information, go to www.overvis.com

Fractal Tools: the Visual Designer for IoT solutions

IT-Enterprise, the IT Software Developer and System Integrator

Fractal

Unit City is the 1st Ukrainian innovation park build in Kiev by Ukrainian investors in 2017. At the beginning the Park includes programming school at 300 people and several office building. The project aims to be the biggest techno park in Ukraine (120 000 m) including R&D centers, residences, co-working spaces, laboratories etc. http://unit.city

Fractal helps people and organizations to implement IoT solutions with help of the visual designer that can be used even without programming skills. Fractal has applications IoT and IIoT in agriculture, manufacturing and educational segments. Fractal team consists of 15 hi-skilled engineers that in total has over 40 years of experience in development, implementation and support of IoT solutions of civil and military applications. The first application has been implemented in monitoring and control of the greenhouse complex Green Garden Group near Kiev. Now Fractal is negotiating about technology partnership at sales on field of mini-greenhouses retailing on franchise model. Another application that has been done is about TermoControl thermostats.Software provides the channel for connecting those thermostats to the server, the server itself, the Web office for vendor and Mobile applications for end-users. As well, Fractal developed the AWS for online control and monitoring of devices network.

For more information, contact http://fractal.tools

Conceptor. The developer of IoT devices.

Concepter is a consumer technology company that is focused on IoT product development based in Kyiv. Cocepter designs, engineers, produces and distributes own products from scratch, launching them into the mass retail (Apple Stores, Best Buy, Amazon). Currently, 28 people are working at Concepter. Totally secured more than $1M in funding in pre-sales using Kickstarter and Indiegogo, shipped overall 50k devices around the globe. In 2015 we founded internal R&D department to work with 3rd party companies on software/hardware IoT projects: IBM, BBC, Sennheiser are only a few in the list of today's customers.

Solutions:

Watering system for indoor plants Grovio – an IoT sensor which monitors and water houseplants - grilleye.com

iblazr 2 wireless LED flash - external flash for mobile iOS and Android cameras – concepter.com/iblazr2

Smart Grill device – Bluetooth grilling & smoking thermometer – grilleye.com

Attention detection system - used to detect people passing the advertising screen and how many seconds each person is looking to the advertisement. All faces are captured and saved with metadata for further analysis.

Personal settings, music and air conditioner in a car - Using Bluetooth Smart user with having it's personal settings for music, air conditioning, volume, etc.

Car positioning system on a map with camera and selftracking - A PoC demo with atest dataset generated from video stream, which is processed, analysed and visualized. Using a map region a car position is estimated.

Experience: Consumer IoT, Industrial IoT, Automotive

For more information, see http://concepter.co

Fab Lab Fabricator. The innovative laboratory of digital 3D fabrication

Fab Lab network (comprising 1153 laboratories worldwide) provides operational, educational, technical and logistical facilities transcending capacities of a single laboratory.

Fab Lab Fabricator is a unique project in Ukraine. It began as a social initiative, and is now an example of the 4th industrial revolution (service-oriented design).

Fablab Fabricator has:

the unique combination of machines, tools and software

the combination of knowledge on both design and making, both the bits and atoms, both theory and practice, both the old materials, tools and processes and the new ones

the combination of people, not only the Fab Lab staff, but also the heterogeneity of people and organizations coming together in the Fab Lab, meeting and inspiring each other and collaborating eventually

the culture of learning by making, innovating, sharing and collaborating

the Fab Lab worldwide network, its diversity of people from many socio-economic backgrounds, their knowledge and experience and the network as a platform for distributed research, development and: productions

the track record of creating feasible solutions for social-economic issues

For more information, see : http://fabricator.me/

FORLAND. THE SOFTWARE HOUSE FOR ACRICULTURE

Forland provides software solutions for agriculture industry. The total experience has allowed to create a specialized product that allows people to manage all industrial business processes of agrarian holding, small and medium agribusiness. The implemented product in the leading agrarian companies of Ukraine, allows to assemble functions of global and operational planning, dispatching and control of work, accounting for the use of all resources of the agricultural enterprise and the formation of managerial reporting based on real data in one system.

For more information, see www.forland.com.ua

Institute of Mathematical Machines and Systems Problems NAS of Ukraine
JRODOS-Ukraine System

JRODOS - a modern tool for decision support in offsite nuclear emergency management and rehabilitation on governmental and regional levels. Implementation of RODOS in Ukraine highly increased capabilities of responsible authorities for predicting consequences of emergency situations inside and outside Ukraine

Among others important points for future are Integration with the EURDEP monitoring data exchange platform and others (RO5) for transboundary transport; Applications for risk studies; Extension to non-radiological releases/

JRODOS-Ukraine System has been used in many projects at the national and international levels.

For more information, see http://www.ucewp.kiev.ua/projects.php

International Center of National Science Academy (ITC)

ITC is dedicated scientific center in the area of information and telecommunication technologies.

Here are 3 interesting developments of TC related to industrial applications

Here are 3 interesting developments of TC related to industrial applications

The main idea of virtual enterprises is based on the principle of integrating interests and resources of heterogeneous enterprise partners around the general product in a single information space of communication network technologies. The information technology of searching for partners of participants of a virtual enterprise on the basis of methods of optimization and intellectualization of search processes is developed. The methodology of organization and functioning of virtual enterprises, information and computer-communication environment of their implementation for production-logistic processes is introduced.

Intelligent Forecasting Systems, Web Surfing and Forecasting of Prices for Precious Materials

A new mathematical method based on agent models, factor analysis and two-threshold method, intelligent user interfaces, databases and knowledge is developed for the program complex «Intelligent Forecasting Systems, Web Surfing and Forecasting of Prices for Precious Materials». This program complex was implemented on the machine-building enterprise.

System of Integrated Management of the Industrial Production Workshop

A system of integration of automated design with a production management system in the workshop was developed and implemented at the large engineering enterprise, which allows the processing of individual parts at the stage of development of the technological process without detailing all the components of the product and shortens the time of execution of the order. It allows to make scientifically based decisions, ensures the coherence of the process of production at the individual stages of the execution of the order, their coordination, analysis and control, as well as control the execution of the entire order.

For more information, see http://www.irtc.org.ua/Eng/Organis_eng.html

Brochure is prepared in Association of Inudstrial Automation of Ukraine, June 2016

Discover Ukraine 4.0

Event in Berlin, 4th of Jule

best opportunities in cooperation, outsourcing, outstaffing,
contracting in Industrial Automation & IT

7 Ukrainian companies and several German experts will comment
and present opportunities in Ukraine

More information http://www.ukraine4-0event.com/

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