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молодих учених і студентів

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Містить матеріали щорічної Міжнародної науково-практичної конференції молодих учених і студентів з сучасних проблем науки у вищих навчальних закладах галузевого спрямування. У збірник увійшли матеріали доповідей студентів за науково-практичним напрямом «Фахові іноземні мови».

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SPECIFIC FEATURES OF THE TRANSLATION OF THE AMERICAN STUDENT'S SLANG

Language is the means by which cultures can express themselves, their essence. Nowadays, it is important to pay attention to the translation of slang, because it responds lively to different events in everyday life.

It picks up and displays a new phenomenon and can change itself, relying on present events. However, at this stage of Linguistics and Translation, slang is still a poorly understood problem that needs further deeper study.

Much of the students slang representing lexical units that are actually doublets of neutral or colloquial units. These lexical items are not relevant for official communication, but are reduced doublet-synonymous (ace boon coon, boogerhead, roaddog= chap, pal, fellow, товариш, приятель). To this category can also be included the own slang (posse, dogpack, tribe, crew = one's circle of friends; коло друзів or kill, kari = make fun of; підсміюватися).

It is important to note, that there is a part of the students' slang, which is very emotive, often with mocking, ironic or parody connotation that is generally typical for any jargon (fruit i looser, stupid person - валянок і дурень; mule with a broom i a very ugly girl - мавпа і дуже некрасива дівчина).

As we see, in the examples above, in formation of these units the significant role is played by metaphorical transfer.

The significant role in the course of creation of new lexical units is played by borrowings. The student's slang, passing for the lexicon, borrowed from other professional groups, a group slang and a slang and, in turn, is a source of borrowings for these social dialects. Student's collectives scoop the innovations in lexicons of the groups, enjoying popularity and serve for them as a behavioural reference point (swilge, swiggle - слабка кава з достатньою кількістю цукру, щоб зробити її несмачною).

Also, here are some cases of borrowing from foreign links (chalkie – викладач; the influence of the Australian animated character of "Old Chalky").

The special place among all units of slang is taken by quite a big group of slanningisms, which is presented by exclamations and provides expressional coloring to the statement and serves for direct expression of feelings and will. Most often slanningisms represent short shouts or onomatopoeias and express various degrees (badand! : розкажуй!, та ну!, bonk!, chyaа!, flip mode!, oh my goshness!, shnikies!: отакої!, маєш!, тю!).

It is necessary to notice that for a student's slang negative valuable orientation is inherent, the general for forms of intra group communication and social situations of use of slang is more widespread.

So, summing up the entire aforesaid, we can say that the main means of formation of new lexical items in the students slang is a transfer of title and various types of borrowings. The only requirement to slang units is that they are characterized by sonorous pronunciation and expressive coloration, because this is the main guarantee that they will take root among the students.

AVIATION OF THE FUTURE

Man must rise above the Earth—to the top of the atmosphere
and beyond—for only thus will he fully understand
the world in which he lives.

Socrates

Many years of efforts of scientists from around the world have been taken to create an airplane- one of the greatest achievements of mankind.

Having a very rich history of development and improvement aviation has even more promising prospect for the future.

In terms of innovative technologies aviation composite materials and bionic structures represent a considerable interest. In the future materials may not even take a solid state, they could be a composition of fluid and gas for example!

A new British Aerospace concept of an airplane design consists in using a set of screens instead of windows to display outside events, as well as show films. The absence of portholes will result in reduction of the vessel weight, consequent significant lowering of fuel consumption and maintenance costs. Such airplane configuration is planned to be introduced by Spike Aerospace (USA) in 2018.

Another innovative technology is the usage of morphing materials, metals or polymers having a 'memory'; or covered with a layer inducing a change in the shape of the material, which makes them adjustable to the passengers' needs with the help of sensor and activator systems.

The new supersonic aircraft designed by Lockheed Martin appeared in 2010. It is powered by the AC cycle that can replace, if needed, conventional turbofan engine, thereby reducing fuel consumption. The aircraft is called the Green Machine being less harmful to the environment.

The problems reducing aircraft fuel consumption and making it more economical and friendlier to the environment have been solved by specialists from Lockheed Martin using box type wings.

One of the innovations in aviation is Boeing's concept SUGAR (Subsonic Ultra Green Aircraft Research), allowing to save up to 70% of traditional fuels through the use of electric batteries as a field source of power, usual fuel being used for take-off only. The aircraft will immediately switch to electric motors, once it reaches a flight altitude. These technologies are forecast to be introduced by 2030.

A concept of a new perspective aircraft-E-Volo multicopter developed by German designers features a lot of advantages. It is safe, sustainable due to the usage of electricity, easy to control (by just one joystick, the rest being automatic) and low in cost.

To finish with, the Solar Impulse invention of the world's first piloted aircraft capable of flying exclusively by solar energy stored in the batteries is also a promising innovation.

FEATURES OF THE ACTIVITIES OF TRANSNATIONAL CORPORATIONS IN MODERN CONDITIONS OF ECONOMIC DEVELOPMENT

One of the most significant trends of the world economy in the world today is the growing integration processes to enhance the interaction of reproductive structures of various countries at various levels and in various forms, which especially actively promotes the activities of transnational companies. United Nations experts in the analysis of TNC were isolated as a distinctive feature of the annual turnover of at least \$ 300 million, however later they came to a more flexible criterion. 'A certain minimum size is required, the firm has become a transnational, but if it has overcome the barrier for the organization of foreign production, the size of the firm does not affect the share of foreign operations in its production. The world practice shows that the typical TNC carries out production or service, at least six countries; it employs no less than a quarter of foreign employees and at least 25% of the capital it invests abroad. The scale of the activities of TNC's left its mark on the diversity of location of production:

- horizontally integrated corporation with companies which produce most of the final products (enterprise network «Fast Food»), to the greatest extent contributes to its rapid spread around the world;
- vertically integrated corporation, provides the unified control of production of the final product. The example is the oil industry where crude oil production is often carried out in one country, refining - in the other, and the sale of finished petroleum products – in the third country. This creates the possibility of the development of production where there is a necessity for this resource;
- diversified transnational corporations are characterized by a combination of their constituent subsidiaries with vertical and horizontal integration. A typical example of this type of corporation is a Swedish Nestle, which has 95% of its production abroad and busy restaurant business, food production, sales of cosmetics, wines, etc. The number of such companies in recent years is growing rapidly.

With the diversification of TNC not only the effect of different levels of economic activity has been realized in different countries, but also one of the structural differences between these terms - unequal degree of injury crisis different industries in different countries.

Thus, the location of production abroad enables economic situations to develop in different countries, in the interests of anti-crisis strategy of international monopolies. It should be noted that the mere entry into new industries (and, therefore, to take advantage of specific features of their environment) at the level of foreign affiliates in some cases is a simpler problem than a similar action in the country where the relevant market may already be monopolized by a powerful competitor.

This could occur as a result of increasing competition, which does not allow to raise prices to a level at which production will be profitable, long-term or difficulties experienced by the industry or the national economy as a whole.

AIRPORT SECURITY: A TOP PRIORITY IN AZERBAIJAN

A concerted attack on terrorism combines an arsenal of high-tech security products and the latest training techniques in airport security. Never before has the subject of airport security come under such glaring scrutiny or the public's confidence in air travel has been so badly shaken.

The safeguarding of international airport against acts of unlawful interference has been a matter of grave concern to the United Nations and its specialized agency, the International Civil Aviation Organization (ICAO) for the past 20 years. Before that time commercial air travel was generally safe and certainly not a subject to threats from criminal activity such as hijackings and sabotage. But with occurrences of unlawful seizures of aircraft and other criminal acts against civil aviation, the world began to experience the consequent evolution of the civil aviation security program. This program, now in force in all countries of the world where air travel is a mode of transportation, encompasses a series of measure and procedures designed to prevent acts of unlawful interference against civil aviation. More recently it has included the protection of airport ground facilities and air navigational aids.

As terrorists develop new skills in their deadly craft, so technology and modern security training techniques are being employed to reinforce the safety of ordinary men, women, and children in the air.

Currently, HeydarAliyev International Airport (GYD) employs over 200 air traffic controllers and center which has been training students in many aspects of aviation. The training center is deeply involved in the fight against terrorism, everyday crime, and drug smuggling. Also included are the metal-detector archways that set off alarm bells when carrying loose change or a pocket calculator. The training center's team of experienced security lectures tailor special courses for airport security personnel in all airlines in Azerbaijan. They cover every possible aspect of the business and act as consultants to put together training packages – which follow ICAO guidelines – to suit each and every special need. Special needs often call specialist expertise and the company's aviation security department often calls in experts in various fields – such as narcotics or weapons – in order to ensure that students get the best possible training to take back to the airport which will eventually come to depend on their security skills.

Azerbaijan is also upgrading its facilities to become a major Eurasian air hub. A new passenger terminal has opened at Heydar Aliyev International Airport, located 12 miles north-east of Baku, the busiest airport in Azerbaijan and Caucasus, and home of the national flag carrier Azerbaijan Airlines. GYD currently handles approximately 1 million passengers a year. Described as 'a new door to the Caucasus', with a total area 65,000 square meters, the new terminal is capable of transiting 6 million passengers annually. Azerbaijan's aerial network is already extensive, more than 35 international routes worldwide.

MANAGEMENT OF INDUSTRIAL ENTERPRISES WITH SUPPORT POSITIONS OF ITS FINANCIAL STABILITY

Management financial stability of the enterprise is a system of principles and methods for developing and implementing management decisions related to the provision of the state funds and assets, their development and distribution, which would allow the company to develop on the basis of income and capital growth while maintaining solvency and creditworthiness and ensuring and maintaining its financial equilibrium.

The main aim of the management is to ensure the financial security and stability of the operation and development of the company in current and future periods, allowing, ultimately, maximize its market value.

To achieve this, the management company has the financial stability to ensure that the following tasks: optimal capital structure and assets, ensuring continuous solvency and creditworthiness, balance and optimum structure cash flows.

In the process of management of financial stability of the company main goal and its main objectives are realized through certain features that should be considered first, as management functions financial stability as operating systems and that are part of any process control regardless of its operations, organizational legal form, size and ownership (analysis of financial stability in the current period, forecasting parameters of financial stability for the planning period, the development of an effective system of incentives for implementation of management decisions on the management of financial stability and to exercise effective control over the execution of decisions to provide or maintain the required level financial stability) and, secondly, as a function of management of financial stability as a specific sphere of management in general (management of capital structure, assets and cash flows).

It can be concluded that the majority of industrial enterprises as the main factors that most significantly affect their financial soundness is determined outside, but on the whole variety of possible internal factors influence a few isolated groups with financial and logistical factors. The quantitative impact assessment is the major internal factors on the financial stability of companies gives reason to believe that its greatest level determined by the volume of their activities, change in volume and structure of debt and equity, the amount of working assets, inventories, receivables and payables.

ФІЛЬМОНІМ У СУЧАСНОМУ АНГЛОМОВНОМУ КІНОДИСКУРСІ: ФУНКЦІЯ І СТРУКТУРА

Питання номінації й утворення назв із давніх часів турбувало людство. Перші вивчення назв беруть початок у стародавній Греції. За М. Хайду, в Давній Греції були дуже популярні «книги імен». Вивчення власних назв протягом XIX-XX ст. сформувалося в окрему галузь мовознавства – ономастику. Сьогодні ономастика є відносно самостійним вченням, яке має міцні міждисциплінарні зв'язки з соціологією та природничими науками.

Згідно з ономастичним вченням, власні назви можливо поділити на кілька класів. До класу назв витворів мистецтва належать назви кінофільмів, а саме фільмоніми. Зважаючи на велику популярність кіноіндустрії сьогодні, важливим є дослідження саме цього класу онімів.

Як і будь-яка власна назва, фільмонім виконує певні функції, а саме – *інформаційну*, тобто повідомлення певної інформації про фільм (події, герої і т.д.), *рекламну* та *функцію впливу*, тобто реклама фільму та запрошення глядачів до його перегляду. Всі ці функції тісно пов'язані між собою. Як стверджує І.Р. Гальперін, залежно від функції, що переважає у назві, існує кілька типів фільмонімів: *фільмонім-резюме* – повідомлення глядачу певної інформації про зміст сюжету фільму, *фільмонім-індикатор* – лише натякає на сюжет фільму, або характер його персонажів, *фільмонім-цитата* – використання у назві фільму цитати з нього, *фільмонім-натяк* – прогнозування фіналу фільму та ін.

Проте окрім функціональної складової, важливим є структурний аспект фільмоніма. Згідно з Н.О. Фроловою, здебільшого назви фільмів в англomовному кінодискурсі складаються з односкладних речень. Серед односкладних переважають номінативні речення, в яких головним членом-підметом є:

- ✓ іменник – *“Whiplash” (2013), “Rush” (2013), “The Revenant” (2015)*
- ✓ прикметник – *“Interstellar” (2014), “Frozen” (2013), “Brave” (2012)*
- ✓ числівник – *“One” (2013), “2012” (2009)*

Також номінативні речення в назвах фільмів можуть бути поширеними:

- ✓ додатком – *“The Wolf of Wall Street” (2013), “Life of Pi” (2012)*
- ✓ означенням – *“Django Unchained” (2012), “Racing Extinction” (2015)*
- ✓ обставиною – *“Star Trek Into Darkness” (2013)*

Односкладні речення в англomовних фільмонімах можуть бути ускладнені однорідними членами-підметами, що поєднані:

- ✓ сполучниковим зв'язком – *“Tinker Bell and the Legend of the NeverBeast” (2014), “Paradise or Oblivion” (2012)*
- ✓ безсполучниковим зв'язком – *“Steve Jobs: The Lost Interview” (2012), “The Hunger Games: Catching Fire” (2013)*

Двоскладні речення в англomовних фільмонімах майже відсутні.

Отже, структура назв фільмів в англomовному кінодискурсі є своєрідною й відрізняється лаконічністю. Важливим є подальше вивчення фільмонімів, зважаючи на те, що вони відображають сучасну культуру та мовну норму.

ANTI-CRISIS MANAGEMENT

Today, in the Ukrainian business community has been formed a distorted view of bankruptcy as a vicious practice, which involves complete business ruin. For most businessmen the word bankruptcy has become a synonym of the "failure". Crisis management as a type of control, able to foresee and anticipate crises and mitigate their course, eliminate the negative effects and turn them into positive changes is a critical factor in the development of modern management and economics. Crisis management is not the sad necessity of correcting the accumulated errors or bitter retribution for them, it is an objective need for management, development-oriented, timely reform of the economic analysis of the future in the present evaluation of the interaction of nature and human activities. The store of social-economic development of men, including the largest, countries in the world suggests that they had to suffer deep recessions, the financial shocks, mass unemployment and acute social and political conflicts. Some countries with great difficulty and considerable cost overcame the difficulties caused, first of all, the crisis in the economy, some quite successful coped with the economic and social upheavals in a fairly short period of time taken out of their economic and social systems of the states of acute crisis.

Anticrisis management must:

1. be guided by the experience of enterprise anticrisis management with the aim of processing the crisis development program and its early revealing.
2. use the information search and analysis about the external and internal environment with the aim to seek crisis phenomenon features.
3. include a range of events which increase the resistance of the enterprise to crisis situations and full crisis.
4. provide anticrisis preparation of enterprise management for the effective resistance to crisis situations and phenomena and crisis itself.

The effectiveness of the anticrisis management is defined as the way to achieve the aims of preventing or adjusting the crisis in comparison with the resource expense for these aims. The forecast and timely prevention of the crisis beginning are related to the significant expenses for information search and analysis, nevertheless, the diagnosis makes it possible to resist the crisis effectively. The effective anticrisis management of the industrial enterprise must have the preventive character and have the monitoring of the external and internal environment of the enterprise with the aim of defining the presuppositions of crisis phenomena. The important unit of the enterprise anticrisis management is the development and in particular training of the enterprise staff aimed at expansion of the possibilities of the staff and the enterprise in general in order to not admit the crisis or decreasing its influence in case.

In our opinion, the key task of anti-crisis management involves searching for the causes of the deterioration of an environment and finding solutions for business optimization according to changed conditions.

Our company's experts are well-trained in theory and have significant practical experience in carrying out anti-crisis management projects.

GLOBAL SHIFTS AND THEIR INFLUENCE ON THE MANAGEMENT OF FOREIGN ECONOMIC ACTIVITY OF ENTERPRISES

The global shifts, such as any significant changes in the structure, relationships and patterns of interaction between the structural components of the world economy and economic relations, are reflecting changes in attraction and importance of the structural elements, proportions, particles, quantitative and qualitative characteristics of the global economic system. The global shifts emergence and deployment are producing formation of the reaction of global economic system's components as a complex set of changes and transformations. The available basis, economic opportunities and potential of each economic system determine a nature of these changes.

The last years course of globalization processes allows to identify the global shifts' enlarged typing that inherently is expression and reflection of global processes in all areas of economic and social life of the world community: mondializm and integration; globalization and regionalization; financing of the economy; informatization, intellectualization, virtualization of economy; institutionalization of the global economy; transnationalization. As a driving force of changes and transformations these global shifts have a direct impact on development of national economy and reflect on nature, directions, forms of foreign economic activity of enterprises and principles of its management.

Global shifts make such a momentum - positive or negative – of the global transformations development and determine the further development of national economies. These components of global shifts are reflected on the directions and forms of foreign economic activity of enterprises. First of all it concerns changing the specific of investment and innovation processes, the geo-economic paradigm formation, transition to a knowledge economy and global informatization. Accordingly, substantially increases the value of foreign economic activity of enterprises concerning export activation, foreign investment attracting and high technology used in innovative sectors, as well as, realization of international innovation and investment projects.

To sum up, the global shifts emergence and deployment in the global economy directly affect the foreign economic activity of enterprises. The complex correction and transformation of Federal Enterprise Architecture (FEA) management require taking into account all the global shifts features, the international experience as for the implementation and management of foreign economic activity, identification of main global shifts symptoms and effect of global shifts.

THE STRUCTURE OF A RAIDER ATTACK

The problem of misappropriation of business by different knavish methods is ignored. The process of raider attack can be observed in economies of different countries regardless of their economic development and legal system. Therefore it's necessary to examine essence and strategy of raider attack which is illegal process of absorption of other companies.

Every company tries to strengthen its structure. But at the same time it leads to the question of economic security and gives an opportunity for corporate raid development. One of this threat is an unauthorized absorption, that means appropriation or fascination of enterprise by the other company. Therefore, it's necessary to consider the nature of terms "raid" and "unfriendly absorption" of the company.

Corporate raid is illegal process of appropriation of somebody's property by violation of legislation for the benefit of other party with establishment and granting to this person all physical and legal rights. The main difference between corporate "raid" and "unfriendly absorption" is the observance of all legal norms by the party which is interested in the grab of the company. Legislation compliance is the border that separates these two concepts. At the first sight it's a legal operation of absorption of assets. It will turn into a raider act, if illegal or unlawful activities are carried out.

Unfriendly absorption is receiving an absolute control over an enterprise, both in legal and in physical essence regardless of opinion of proprietor. Formally nothing depends on director's decision.

The first stage is "eating a company": that is a work for "bloodhounds" that search for enterprises for possible realization of raider capture. They inform on a state of a company-future-victim. In this case raiders get to much information, sometimes even from the ex-managers. It concerns weaknesses of a company: tax evasion, debts on credits and so on.

The second stage is a study and collection of information taken from the press and other sources. Raiders are interested in:

- Corporate information. Documents that describe administrative activity, protocols of meeting, protocols from the boards of directors and other;
- Financial and economic information: accounting reports, tax and bank history;
- Chairman of company, staff of managers. Data on a person or group of persons, that hold positions, or have voice in decision making, and personal information that can influence course of events.

After a thorough preparation a plan is put into action. A near-term step is buying up of shares of stock. If it is succeeded to find subornation shareholders, then part of the bought shares of stock sticks to in a secret, in fact immediate actions are possible from the side of guidance. In case of reacting on raider interference, proprietors can go in two ways: 1) to produce additional emission and then raider package will lose a value; 2) to rewrite the real estate on daughter's companies. If the first step was a successful one then a raider brings a claim on arrest of majority of shares or claim a debt or oppression of breaking shareholders' rights. On this stage a raider package becomes a control one and

while the proprietors of company try to take off an arrest from the shares of stock, raiders quickly call a meeting of shareholders to appoint a new chairman of a company. In its turn the new chairman sells valuable assets of this company to another participant from the raiders' environment. So the company is successfully captured. The game is over. For small enterprises it is better to consult antiraid agencies at once, because it's extremely difficult to win this dirty game.

Bovkun Natalia

Scientific supervisor –Yashchuk O.P., lecturer

SKIN REPAIR

Fractured planes and the covering frame are frequently destroyed in large areas when the aircraft is broken. Skin repair in such cases is accomplished by replacement of damaged sheets or parts of sheets with the new ones. The removal of the damaged cladding is produced in a way to make possible the repair of the framework elements and perform reliable joining of the new covering sections to the remained parts.

The sheet is usually replaced in case the damaged portion is more than $\frac{2}{3}$ of the sheet area or when the total area of overlap in the sheet, based on the previously established exceeds 30% of the leaf area. New sheet is set and fastened in accordance with the serial drawings (as was the old drawing). Upon failure of the cladding, made of a material B95 and attached to the frame with riveting press, a new sheet is usually made of material D16-T (subject to the requirements of strength).

When you replace parts of the sheet cut lines whenever possible provide near the power elements of the frame. The joints of sheets are tied to these elements. However, when the location of the elements of the frame is at a relatively greater distance from the place of damage to the cladding sheets can be joined between the elements. A new section of the sheet connected with the rest of the sheet is overlapped or butted. Lap typically combines a relatively thin covering sheets (thickness 1.5 mm). Thus the forward flight pattern and one side (top or bottom) of the new sheet is slid under the remaining plating. In the case of butt joints of the sheets of the dock shall be performed using internal butt pads. The number and parameters of joints welds in the transversal and longitudinal joints are provided the same as the corresponding serial on the joints.

On modern aircraft fabric covering of the wing and fuselage is provides with variable thickness treated by chemical milling. When replacing such a sheet of cladding or parts of the sheet the new sheet should be made of similar materials.

In the case of local leaks, dents, cracks, nicks, repair sheathing of a covering the installation of the lining gain is made. At repair of a broken covering or defective warped space is cut out. The cut is performed in the form of a circle, oval or rectangle with rounded corners ($R > 10\text{mm}$). If you see any scratches or nicks, lining in the damage zone cannot be cut. Pickguard is mounted directly to the affected area of the skin. The cover plate includes the same material and the same or slightly lesser thickness depending on the depth of the damaged skin.

AIRPORT CARGO TRANSPORTATION. MANUFACTURE FEATURES OF ALS11K AUTOLIFT

One of the basic means of mechanization, currently used in airports for cargo transportation on the territory of airports, loading and unloading, are vehicles with a lifting body. The main requirement for it is good manoeuvrability and the presence of control mechanisms to ensure safe movement of the car near the aircraft.

Taking into account that the height of the sills of hatches and baggage cargo door is different, to vehicles with a lifting carbody not be required to complete universality. It is sufficient for the existing cars to be effectively used during maintenance of aircraft of a certain group.

According to the implementation of loading and unloading technology the aircraft with lifting body vehicles are divided into two groups, with the load of the machine through the tailgate of the loading ramp, with transfer operations being accomplished through the front hinged platform. Vehicles with a lifting body are divided into cars with open body and a closed body or autolifts.

One of the models is ALS11K Autolift. It consists of a lifting "scissors" mechanism with a body mounted on the chassis of the car. Autolift carbody is made of insulating "sandwich" panels, lined with fiberglass.

The body is equipped with lifting doors of a lamellar type. At the back of the car body there are folding shelves - two on each side and fittings for fixing airplane catering containers. The floor is covered with corrugated aluminum sheet. The vehicle is equipped with front and rear platforms.

A special feature of ALS11K is an additional platform that can be moved forward in the longitudinal direction and can rotate around its axis. The platforms sliding and turning is powered by hydraulic cylinders, and a stopped by means of sensor signals. This design provides accurate and safe approaching the aircraft in almost any conditions. Application in Autolifts of control system technology developed by «ifm-elektronik» company (Germany) - the world leader in the field of electronics for mobile equipment increases considerably the reliability of the equipment.

ALS11K Autolifts use «Bosch-Rexroth» mobile hydraulics. To facilitate catering trolleys loading into the aircraft there is a folding platform on the sliding portion of the front area. The rear platform with hydraulic lift is designed for lifting goods from the ground level or the ramp, as well as for loading aboard a low aircraft. In the retracted upright position the rear platform is locked.

Raising and lowering of the body is remotely controlled from the driver's cab or a control panel located in the car body. Raising and lowering of the rear porch is accomplished from the rear console or the control panel located on the platform proper. At the back there is a special device that provides communication with the driver's cab.

In conclusion, I would like to cite the well known writer E. Zola: "Only happiness in life is constant striving forward". And, it should be noted that actually science does not ever stand still, and aviation is growing up with every coming day.

THE BEST IN CABIN INTERIOR SOLUTIONS

Since the earliest days of civil aviation designers and engineers have been working on interior and construction modifications that could make flying not only comfortable but enthralling experience. New trends in aircraft interior design have been introduced to respond to current consumer demands.

IXION Windowless jet with immersive panoramic views conceptualized in the commercial aviation sector is one of the most recent innovative designs challenging current thinking. Its fuselage with fixed solar panels features a large, open-glass windowless cabin with flexible screens installed on walls and ceiling to display outside scenery. Passengers are allowed to have a breathtaking 360-degree view via an array of external cameras mounted on the aircraft's fuselage and wings. Tiny cameras capture live streams views from the outside and broadcast them to the inside of the cabin making it appear flyers are looking through one large window. High-resolution, low-voltage displays that run the length of the fuselage are coupled with amorphous solar panels which power the onboard systems and contribute to visual dynamic of the exterior.

The use of Parallax barrier technology alongside with simplified gestural control opens up a spectrum of possibilities allowing passengers multiple displays on the same screen and enabling them to participate simultaneously in video conferences while enjoying the immersive views. Passengers can be directly engaged with their environment with easy hand movement.

Aside from smart interior considerations, there is an engineering reason for these innovations. Removing the windows would reduce the weight of the airplane, making it more fuel efficient, simplify construction and allow to create flexibility for interior layouts. Ditching windows from the airplane allows a smother fuselage, which will reduce drag and increase speed, meaning the flyers will be able to get to their destinations faster. It also reduces the weight by not needing structural support for windows and eliminates all possible construction challenges.

The similar idea is being implemented by Spike Aerospace Boston engineering firm engaged in designing a windowless supersonic jet. The S-512 offers its passengers digital views of the surroundings through full-length curved digital screens running the length of the fuselage. The screens may be dimmed in order to give passengers some sleep and scenic images may be changed for the ones stored in the system. Due to the absence of windows, advanced airframe and engine technology it can achieve speeds of between 1060-1200 mph.

So, by directly engaging passengers with the outside environment, providing them an unobstructed panoramic view from the inside as well as a short time to get to the destination, the introduction of the new developments in both aircraft's exterior and interior greatly enhances passengers' experiences and makes aviation industry more profitable.

SPECIAL AIRPORT BUSES

For transportation of passengers between the terminal building and remote stands on the apron or between individual buildings at the airport it is possible to use regular buses or special buses. The special airport buses used for the operation on the apron usually have a bigger capacity than regular buses. Because they have not been designed for regular operation on public services, they can be wider and have lower clearance. This makes it easier for the passengers to get in and out. In spite of the fact that special buses have higher capacity, sometimes the capacity of one bus is not sufficient. Therefore the system of “bus train” is used, which consists of several units with a drive and semitrailers. Some airports use mobile lounges to transport passengers between aircraft or a remote terminal and the central-processing terminal. The advantage of the mobile lounge is simplification of the passengers’ movements. The passengers do not have to change level as when using buses. If all the stands on the apron have been designed as remote and mobile lounges are used for transportation to them, there are advantages of a quieter and less polluted environment in the terminal building as aircraft are usually parked on remote stand positions. The vehicle can be used as a holding lounge while it is docked at the terminal frontage. For connecting a central terminal with a remote pier, which does not involve people movers or vehicles, is to bridge the taxiways.

The simplest and also the most widely used types of people movers within terminal building are escalators for overcoming changes in level and moving walkways for near-horizontal transport. Moving walkways are mostly used for distances up to 200 m. They usually do not significantly shorten the time taken to reach the aircraft. The usable distance is limited by the walkway speed, which usually does not exceed 1.25 m.s. The length of walkway is also limited by the fact that it is only possible to get off of the walkway at its ends. Therefore several sections of walkways following each other have to be installed in the corridors to the gates. For transportation of passengers, flight crew, employees and visitors between individual buildings over longer distances at the airport: between terminal buildings, between a central terminal and satellites or between the terminal building and runway station or parking lots, the use of walkways is not appropriate, because of their slow speed. Shuttle buses are the most common solution but, as the demand becomes greater, it becomes appropriate to use an automated shuttle type of people mover either on one track or on parallel tracks. The first shuttle type of people mover in Europe was installed at Gatwick airport (Great Britain).

The reliability of people movers is usually higher than escalators or movable walkways, and are less vulnerable than buses to labour disputes. However, most failures bring the whole system to a halt, while a bus can easily be replaced. In the transportation peak the people mover operates at set intervals. Outside the peak it may be possible to call the vehicle by a pushbutton as with an elevator. There are many different types of constructions and drives. Some companies use fully automated carriages on tires with electrical drive, while the OTIS company uses its own technology, which is used for elevators, the carriages being driven by a steel rope.

THE RISK STATEMENT OF DEVELOPING MARKETS

Whilst countries other than those with well-developed legal systems and securities markets have been working to develop their legal, judicial and regulatory infrastructure there is still a high degree of legal uncertainty concerning the rights, duties and legal remedies of market participants in some of developing countries. Emerging markets can carry significantly greater risks than those typically associated with investing in more growing markets. The nature of these risks will vary from country to country. Before making any actions with investment in these markets, you should independently satisfy yourself that you understand the significance of the relevant risks, and that such an investment is suitable for you and any clients for whom you are acting in a fiduciary capacity.

The securities markets of emerging countries are in the early stages of their development and many of them generally lack the levels of transparency, liquidity, efficiency and regulation characteristic of the more developed markets. The credit rating of local financial institutions may not be high and there is often limited trust in such institutions. Companies may be considerably less well developed than in many countries with well-established markets and, in some cases, effectively non-existent.

Many of developing countries lack a strong infrastructure. Telecommunications generally are poor, and banks and other financial systems are not always well developed, well regulated or well integrated. These countries may also have considerable external debt, which could affect the proper functioning of their economies with a corresponding adverse impact on the performance of their markets.

Businesses in these countries may have a limited history operating in market conditions. Accordingly, when compared to companies in more developed markets, such businesses may be characterized by a lack of management who are experienced in market conditions and a limited capital base with which to develop their operations.

The political systems in the majority of emerging countries have been the subject of substantial and positive reforms. The relative infancy of some of these political systems may mean that they are more vulnerable in the face of popular dissatisfaction with reform, political or diplomatic developments, or social, ethnic or religious instability.

Foreign investment in emerging countries is in some cases restricted. Some of these countries have non-convertible currencies and the value of investments may be affected by fluctuations in available currency rates and exchange control regulations (which could change at any time). The repatriation of investors' funds and profits may therefore be restricted or difficult and could involve significant cost.

In some countries the tax position is complex and subject to more frequent change than in western countries. It may not be possible to reclaim tax even where this is theoretically possible due to practical and timing issues.

Many emerging countries do not yet have a legal system comparable to those of more developed countries. Legal reforms may not always correspond to market developments, resulting in ambiguities and inconsistencies which increase the risk of investing in these countries. hip dispute.

The concepts of ownership of and procedures for the transfer of securities in emerging countries may differ radically from those in more developed markets. In some markets, for example, the term "dvp" (delivery versus payment) does not imply that securities and cash move at the same time. Registration of shares may not be subject to standardized procedures or to a centralized system, and may be effected on an ad hoc basis. The concept of nominee ownership is undeveloped and, in some cases, not recognized at all. As a result, registration can be administratively cumbersome and time consuming, leading to delays in settling trades, ownership disputes and constraints on trading.

Accounting, auditing and financial reporting standards in many emerging countries are not yet equivalent to those applicable in more developed countries and in some of these countries are of virtually no assistance to an investor. The availability, quality and reliability of corporate information (including official data) is likely to be lower than that in respect of investments in more developed markets.

Didenko Olexandra

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EMOTIONAL INTELLIGENCE AS A PART OF EFFECTIVE MANAGEMENT

Emotional intelligence is a concept arising from the psychological data in 1990. Researches of foreign scientists showed long time that high level of general intelligence (IQ) does not guarantee its holder the career success. Despite the fact that our culture still focuses on obtaining academic knowledge and completely ignores the emotional intelligence (EQ), success of every top manager in the business depends on the EQ. Emotional intelligence is the human ability to define own emotions and the emotions of people in order to use this information in realizing own goals and achieving organizational objectives. In this case IQ is a system of cognitive abilities (sensation, perception, memory, thinking, all mental knowledge and skills). Unlike IQ, which level is largely determined by genes, EQ level depends on the efforts of an individual. Development of the emotional intelligence is a difficult job, but it enhances personal effectiveness.

The basis of emotional intelligence consists of a certain group of skills: cognitive, emotional, adaptive and social. Such abilities are forming leadership skills that help in creating positive atmosphere in the team and prevent the organizational conflicts occurrence. Therefore, a professional manager should develop his cognitive, emotional, social and adaptive skills.

Thereby emotionally intelligent manager has to constantly cope with the state of emotional instability. T. Goleman says that creation of the friendly climate in the company depends on the leader's actions to 50-70%. However, 20-30% of differences in labor efficiency could be explained only with organizational climate, which is actually emotional attitude to the job. Just emotional state of the leader really affects the psychological climate in the team and, as a result, influences the effectiveness of employees. Managing own emotions involves understanding the development of relations with other people, that requires taking into account different emotions and their choice by managers for the successful work, the features of which are communicating with people, solving internal organizational conflicts. It is necessary to develop such constructs as confidence in emotional competence, emotional knowledge and skills. According to the re-

search of Tracom Group, leaders or people with high level of influence often have "blind spots" damaging efficiency of their work with colleagues or subordinates. These are the basic elements of the emotional intelligence: empathy and ability to maintain effective relations with other people. The key to their development is not only understanding own behavioral preferences, but also the behavioral patterns of colleagues, as well as understanding how to adapt their behavior to achieve desired result.

As a result, emotional intelligence is an important factor in ensuring effective manager's activity. It belongs to the organizational competencies of management potential of the company. High level of emotional intelligence as a part of modern management allows achieve successful self-realization, increases the intellectual forces of the personality, significantly influences the productivity and provides comfortable relations inside the team. Mentioned emotional intelligence abilities are becoming the key areas in achieving high financial indicators of the enterprise.

Dudko Anastasiia

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PECULIARITIES OF STRATEGIC POTENTIAL FORMATION OF AN ENTERPRISE

Under conditions of dynamic development of market processes, unstable environment it is necessary to reorient efforts of management of companies to ensure the ongoing performance of the formation of long-term competitive advantage. Today, businesses need not only to actively participate in market developments, but also learn how to use the principle of preventive activity when enterprise management system is focused on acquiring the ability to be the cause of those events. Objectively, there is a question of finding opportunities for successful long-term operation and development of the company. The source of the formation of such capabilities is its strategic potential.

The strategic potential of the company is an interconnected set of resources which are at its disposal and are crucial to achievement of strategic objectives, assessment of the possible limits of operation in the future, and are based on projected environmental conditions.

The main purpose of forming the strategic potential of the company is to provide effective ways to use the resources and reserves of the company in order to maximize the effective implementation of its strategy at all stages of development.

The features of the strategic potential are a reflection of the past, that is the set of properties, which were accumulated by the system in the process of its establishing and those that contribute to the possibility of its functioning and development; determining the level of practical application and use of existing capacity; orientation on development (on the prospects in the future).

Corporations today would find it difficult, if not downright impossible, to replan strategy every time the environment shifts. What they need is a whole set of possible scenarios and the ability to automatically change strategy whenever the scenario changes.

Formation of strategic potential is connected to each organization with finding its unique resources and core competencies that become the basis for long-term goals and obtain competitive advantages.

The common prescription for competing in the absence of competitive advantage is the concept of strategic agility or adaptability, which involves rapid pivots, self-disruption, and abundant experimentation. Success, in this worldview, often entails mimicking the lean startup, strategically maneuvering with nimbleness and flexibility.

But some problems may occur while forming the strategic potential. Some of these problems only are minor annoyances, while others can prevent the strategic plan from succeeding: not having the right people at the board, not facing the issues, a heavy-handed process, lacking focus, failing to establish accountability etc.

Analysis and evaluation of strategic potential allows determining whether the company has sufficient powers and resources that are crucial to achieving the strategic objectives and possible limits of functioning in the future, based on projected environmental conditions.

**Gerasimova Viktoriya
(Turkmenistan)**

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OUR FUTURE WITH AIRBUS GROUP'S MARKET

Airbus Group's market access needs to evolve with the world economy. Proud of its European heritage, the Company is adapting to a more global world for the design, development and manufacturing of its products and services, as well as attracting and retaining talents.

Since the first Airbus aircraft program came into being, the task has been to remain on the edge of advanced technology and to provide a sure, efficient and cost-effective training for current and future members of the Airbus aeroplane family. This effort is based on simple but proven pedagogical principles:

- to teach only need-to-known information;
- to train to proficiency;
- to learn by doing.

The Airbus Group has earned the trust of billions of customers, passengers, operators and stakeholders worldwide thanks to the quality and safety of its products. Product integrity is as important as business integrity. We want to be known as a company with 'integrity inside': integrity in its people, its partners and its suppliers.

Airbus Group is already a leader in each domain in which it operates: it has achieved parity with Boeing in the commercial aircraft segment, is the No. 1 helicopter company in the world, the European leader in space business and second in Europe in the defense sector. Moreover, since the Group's foundation in 2000, it has increased its revenues by 145% and its annual order intake by 346%.

Taking into account the present volume of world tourism and trade, the costs of obsolete and inefficient clearance procedures and, therefore, the benefits to be gained from their elimination, are substantial. The savings to be gained from improved facilitation of passenger traffic would be some what complex to estimate, because of the subjective values that different individuals may place on their time, with stronger reason when travelling for leisure. Nonetheless, for merchandise, costs have been estimated as high as ten per cent of the value of world trade. Since the value of world imports in 2015

amounted to US\$2217 billion, the annual cost of inefficient trade facilitation worldwide for all modes of transport can be estimated, on this basis, at up to US\$ 222 billion and if ten per cent of this amount is attributed to air cargo, the worldwide savings from facilitation cost-cutting campaigns for air cargo alone could attain the staggering sum of US\$ 22 billion per annum.

Facilitation is a complex and multidisciplinary endeavor. International air transport had a leading role in its early development and continue to provide this field with guidance and leadership. Neglect of its presents would be costly both in terms of economic losses and the paralysis of transportation and trade that would result. Observance of its rules is rewarding, financially and in terms of the human benefits from increased communication and trade.

Horban Yuliya

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REBRANDING OF PUBLIC PROCUREMENT BILL

Rebranding is a marketing strategy for an established brand to create a new name, symbol, design, term, slogan or to change its positioning, as well as for the new differential identity. Rebranding refers to the production process of a company and its product. To rebrand is to make the brand relevant and interesting, add fresh emotions and ideas. Rebranding is in need when brand is outdated, has a competitor with a more interesting brand, a company changes area of business or brand is to carry out new tasks.

Rebranding is not only a proof that a company has reached a new level. In any business it is important not to lose existing customers, but to adjust to the needs of the target audience. So rebranding is aimed at consumers. In this situation, a new brand will strengthen the company's position in the market. As a result, there is a growing credibility. Such companies as Mozilla, Firefox, Apple, Microsoft are examples of rebranding. But there are also non-traditional forms of rebranding.

Bill No. 2087a (Ukrainian Law System) significantly changes the functioning of the public procurement system. This document creates a basis for full transition to electronic procurement. Moreover, it implements a psychological feature – the rebranding of public procurement.

Everything that is bought for the state, paid from the budget, i.e. taxpayers' money becomes public. Therefore, in the new act, the term "state" is changed to "public" according to world standards (Public Procurement).

Signing of the bill is concluded with the first stage of the reform: the increase in the number of anti-corruption fuse, reducing barriers to the participation of business and harmonization of Ukrainian standards with the best international standards of the WTO agreement on government procurement.

Public procurement reform, carried out by the Ministry of economic development and trade, takes place in different directions.

Main step of reform is the development of Prozorro e-procurement system. It touches the technical side of electronic trading. The system is operating in a pilot mode, although the results are quite real: total savings of budget funds have exceeded UAH 325 million and continues to grow. However, the introducing of the system to national

level is a serious step. It is not just to add a few more servers. In Ukraine there are 15 thousand state buyers and 25 thousand tender committees. They take part in e-procurement: some making a few purchases a year, others - dozens of purchases daily and require the continuity and flexibility of the process. The system must be able to withstand their simultaneous operation, to cope with the overload and to be perfectly protected.

"Procurement" concept has become synonymous to corruption schemes. So changes in electronic documents transfer, information disclosure after the auction, disputing the results of the auction are essential. Only in such a scenario, it is possible to prepare the system ProZorro to commercial operation and start saving for the state tens of billions of hryvnia. Prozorro is not just refunding of money stolen from taxpayers. In fact it is the correction of many distortions caused by the corrupt practices.

Huliuk Viktoriya

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MODERN ALTERNATIVES TO CONVENTIONAL SECURITY

For logging into a system, you do not have to remember complicated passwords. Identification using biometric data allows to do without them. However, the use of new identification methods does not prevent hackers from logging into a system.

Many accounts are at risk because people use the same password for different services. A strong password should consist of special characters, large and small letters and numbers. Most people can not remember a complex password. Therefore, developers are working to create additional methods of data protection.

But you can not feel completely safe because almost every way of protecting has its drawbacks.

Though really reliable alternatives to passwords are only on the development stage, they can be grouped as follows: two-factor password for the smartphone, scanning the iris and retina, recognizing the design of veins, measuring the heart rate, voice authentication.

Two-factor password for the smartphone. The user must enter not only the correct password, but also a one-time code sent by SMS or email. But this method does not ensure complete safety. There are special programs through which criminal penetrates into the user's device and reads the code and the message.

Scanning the iris and retina. Retina iris can be copied using simple tools, such as photos. But scanning the retina is considered to be the most credible alternative to the usual password.

Recognizing the design of veins. The scanner reads the design of veins on the hand in the infrared color. The method is considered one of the most effective means of biometrics.

Measuring the heart rate. New biometric methods register a pulse, as on an electrocardiogram. It provides correct user identification, as even with the same heart rate the pattern will be different.

Voice authentication. There are different ways of constructing a voice pattern. Usually, it is different combinations of frequency and statistical descriptions of voice.

Such parameters as modulation, intonation, height of tone, etc. are used. But this method is not reliable; actually the voice can change when the man is ill.

Researchers are constantly developing new ways of user authentication instead of conventional passwords entered on a keyboard. DNA identification is considered to be one of the ways of reliable protection.

While biometric passwords are not widely available, you can use the Password Manager. You should remember only one password. On Apple's computers you can use KeePassX. Password Safe Personal is designed for Windows. Lastpass program is complementary to Password Manager and prevents data interception by other Android applications.

Hun'ko Viacheslav

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STAFF MOTIVATION AS A NECESSARY COMPONENT OF EFFECTIVE FUNCTIONING OF THE MODERN ENTERPRISE

One of the necessary conditions of the effective functioning of modern enterprises is the use of effective and adequate real conditions of work motivation, based on new ideas and successful international experience. This area is a particularly actual problem of development and implementation of recommendations to solve the incentive problems at domestic enterprises.

Based on the previous research it was determined that motivation is the basis for the creation of special conditions to improve the performance of staff - creativity, energy, perseverance and diligence. The effectiveness of the company depends on the outcome of each employee and the performance of personnel, in turn, is a reflection of how effective the motivational mechanism in the enterprise is.

It has been researched that at present Ukraine's economy is on the path of reforming, restructuring the impact of the crisis. In this regard adverse factors such as inflation, unemployment and debts enhance causing the problems of staff motivation in the workplace.

The basic problems of incentive mechanisms of Ukrainian enterprises are: the interest of management of majority companies to pay workers the minimum wages because of the absence of monitoring the labor market; opacity and complexity of the payment system of the executives at the first-line level of management with significant number of elements which complicates the process of payroll; frequent use of various direct premiums for performance of duties such as compensation of low salaries of employees; injustice of financial motivation of employees as specialists of the same level in different departments receive unequal reward, and ignoring of seniority, experience and actual results in determining the forms of employee motivation. Also, companies often challenge to develop an effective "motivational mix" - the right combination of tools stimulating material and moral motivation of employees.

The motivation experience of the company «Google» (as the world leader in this area) is studied by many researchers, because it has its own creative ideas of favorable working conditions. Recipe of the «Google» success includes: high salary (is the foundation of the system); unique comfort in the workplace; understanding that the main

thing is the result (the performance in any possible way); transparency of performance of tasks; social responsibility of enterprises.

To improve the efficiency of the staff it was offered to create an effective motivational mechanism of measures implementation: 1) ensuring that the real wages equal to the employee's contribution to the overall results, supporting and encouraging creativity and innovation of employee by offering them cash bonuses and rewards; 2) creation of favorable environment for employee's qualification as well as the introduction of continuous training; 3) ensuring the participation of workers in decision-making, delegation of authority to subordinates (i.e. employees themselves increase the efficiency of their work, choosing the ways of tasks and use their creativity); 4) exclusion of authoritative way to improve post for fair and deserved promotion on hierarchy; 5) improving information system for communication expansion; 6) using "Table of opportunities" which includes a list of additional tasks for managers that they can do on their own desire to earn cash bonuses or to be promoted; 7) the involvement of competent specialists coaches to work with the staff and their motivation.

It is concluded that the problems of motivation at Ukrainian enterprises need an urgent solution by creating favorable working conditions and ensuring a fair evaluation of the work of employees for long-term perspective developing, optimizing costs and improving competitiveness.

Ischuk Vitaliy

Scientific supervisor – Murkina N.I., senior lecturer

SMART CITY TECHNOLOGY IN THE WORLD

«Smart Cities» – is the latest development in the field of urban planning. Smart Cities can become a link between the creation of sustainable future and further economic growth, and the growth of employment. There are many definitions of Smart Cities: environmentally favorable for life, "reasonable" and "green." Nevertheless, the fundamental feature – the use of information and intelligence systems of its processing to ensure a stable connection between a person and some knowledge that will become a driving force for the transition to a fundamentally new method of energy consumption. The goal of smart cities – to achieve the impossible: to create something artificial (city) and at the same time is so self-sufficient that it will only marginally affect the environment. Business drives technology and large-scale urbanization drives innovation and new technologies.

Smart systems optimize energy costs designed primarily for businesses, office buildings and municipalities. The heads of these institutions begin to collect data on resource consumption processes in the building, working appliances, etc. They can respond more quickly when there is no normal consumption.

A smart city can be defined as a city that uses resources efficiently, through the use of information and communication technologies in eco-friendly integrated solutions. Smart City intelligent meters and sensors installed throughout the city, can provide digital traffic information, available parking space, energy consumption, traffic incidents, weather conditions and so on. With this information city residents can be found via their smartphones or other devices, and thus work out the best route around the city. This

organizational approach allows us to use physical infrastructure more flexible and personalized. This underscores the need to increase the level of mobility and connectivity by combining efforts and knowledge in all sectors of society.

To implement the concept and analysis of huge data volumes generated as a result of human activity and the movement of various objects, the Fujitsu has developed basic infrastructure SPATIOWL. It uses data collected from a large number of sources, collects, processes them and makes recommendations on possible actions

Integrating technology in Kiev Smart City.

According to the initiators' plans of this project, the hub will serve an educational function - it will open a school Smart City, which will also serve as a center of expertise, a platform for the development of technology "smart city" and a platform for Network. The hub will be built in order to inspire and consolidate complex leaders and agents of change, which, in turn, will develop Kiev and Ukraine. The hub will not only mix and "grow" social capital, but also become a test and demonstration area "Concept of Kyiv Smart City 2020", as well as ideas and solutions for all stakeholders of Ukrainian cities.

Kaplun Yuriy

Scientific supervisor – Denisenko N.G., lecturer

IMPORTANCE OF CODING IN PROGRAMMING

Steve Jobs, a co-founder, and chief executive officer (CEO) of Apple Inc., once said, "I think everybody in this country should learn how to program a computer because it teaches you how to think". Really, programming shows us how flexible and powerful human mind can be in solving problems, complexity of which can be compared to constructing a space shuttle. By learning how to code we explore the altitudes of our mind unknown before.

The inventing of the first programming languages was proceeded by the advancements in mathematics, which gave it the main direction of developing. Learning to code can make you more efficient and productive person, expand your thinking skills, because it actually represents the way we think to overcome the everyday problems. So, is it really learning to code or coding to learn?

Nowadays the software is occupying the world by cybernation and automation of all types of routine jobs, that people face in everyday life. The primary knowledge of how lines of code create the digital world we observe on every day basis and it is quickly becoming a fundamental digital literacy.

Programming is about the process of breaking down the problems to smaller particles that are possible to understand and solve. So it teaches us analytical thinking, which has a great value in modern world of information overwhelming.

Another great side of programming is that it allows people from all social layers to achieve high goals in their life. No matter where you are from, no matter who your parents are, no matter what your sex is or what colour you are, the only thing that does matter is your knowledge and skills. And everyone who has a laptop with an access to the Internet can master their programming skills without any restriction.

All in all we can say that programming is incredibly empowering learning skills, it integrates a single human in a widespread process of information interchange, which

covers the whole planet due to modern technologies. You can grow up from the passive observer to the active collaborator of this global process by learning how to write a computer program.

Gabe Newell, a co-founder and director of the video development and digital distribution company named Valve Corporation said, "The programmers of tomorrow are the wizards of the future". I couldn't agree more, because in the modern world the forge of future is a computer and the ability to make it whatever you want is very close to the magical forces of the mythological heroes of the past.

Kaschuk Oksana

Scientific supervisor – Grytsai S.Yu., senior lecturer

GIFFEN'S PARADOX: THEORETICAL MODEL OR REALITY?

The Law of demand confirms: when the price of a product falls the demand for it rises. But sometimes in economy takes a place the situation when the falling of price lead to the falling of demand, and vice versa. Thus, the only exception to the Law of demand is the Giffen's paradox, named after the 19th century British economist, Sir Robert Giffen.

Goods that provide this effect Alfred Marshall in his book «The Principles of Economics» named the Giffen's goods: «R. Giffen had pointed out that during the famine in Ireland in the 20 century the value of demand for potatoes, which price had raised, substantially increased and linked it to the fact that in the budgets of poor households spending on potatoes occupied a significant part. Higher prices for this product meant that the real income of this segment had reduced, and they were forced to reduce the purchase of other goods and to increase the consumption of potatoes to survive.»

Therefore, Giffen's good is a product that people consume more of as the price rises and vice versa - violating the Law of demand (potatoes, bread, cereals, and other comparatively cheap products). According to J.R. Hicks, Giffen's goods must simultaneously meet the following requirements:

1. The good must be an inferior good in the representation of consumer;
2. There must be no substitute products for consumer;
3. The good must constitute a substantial share of consumer spending.

Giffen paradox at first glance seems to be an exception to the Law of demand. A lot of famous economists doubt the reality of Giffen's goods existence in real life. For a long time the only example of Giffen's good were potatoes during the famine in Ireland. Thus, famous economist C. Linsey has considered that Irish people didn't have a physical possibility to buy more potatoes because of bad harvest. But this fact doesn't deny the existence of Giffen's goods, because this phenomenon reflects the behavior of individual consumers and not the team. Therefore, reduction of the total number of potatoes in Ireland at that time did not excluded, as admitted the authors of the above-mentioned article, the fact that some families for some time could consume more of this product than before. And it is enough to state Giffen's effect.

But N. Miller, the professor of finance in the College of Business at the University of Illinois, has found a practical confirmation of the existence of Giffen's goods. He conducted an experiment with raising and lowering prices for rice in one of China's

provinces where this good was an important part of the consumer panner for poor people and has found that rice meets all the features attributes of Giffen's good.

So, based on all the above we can make the conclusion that the Giffen's goods are not only the theoretical model but also real economy phenomena. But they are very rare in practice because few products meet the requirements which are stated above. But in the strict logic of the economy theory of consumer behavior, there is the possibility of Giffen's goods nascence and their appearance in practice is a signal of social distress, crisis or evidence of some decline in the living standards of population.

Kazadaev Ivan

Scientific supervisor – Verbylo G.P., senior lecturer

HOW TO IMPROVE THE IT SPHERE IN UKRAINE

Everybody knows, IT is the future of our world. The best mark of the IT position of a country is to look at a snapshot of social reality. Just think, 20 years ago many people danced at concerts, but nowadays, with the help of new technology they can record some videos and take many photos to share with their friends. Don't you see the difference? Now it's only 2016, but imagine what is waiting for people in 2030 and 2040? It's not easy to become an IT professional, because you need to be highly educated and literate. Today, there are about 74 000 entrepreneurs, who provide IT service, they are a part of the middle class of Ukraine. They are young men and women (approximately 27 y.o.), who paid well for their work – about 2000 dollars per month. And as a community they are very important for the economic of our country.

Nowadays, even if there is an economical crisis in Ukraine, IT is still getting better.

There are some factors that have a bad influence on our economy, but they also can be regarded as good conditions for the IT sphere's growth. For example, the fall of the national currency makes living for foreigners very cheap. And by the way, we can observe a big inflow of foreigners who want to realize their projects in Ukraine. Therefore, it's a great time for Ukrainians to find a new job, because opening a new startup for foreigners will be 5-7 times cheaper in Ukraine.

So, what are the main problems of Ukrainian IT market nowadays? The Ukrainian IT market isn't considered bad in the world, but it needs a lot of help from the government to develop. Here are a few solutions to the IT sphere's major problems:

- producing a favorable investment climate;
- adequate protection of intellectual property;
- strategy of Ukrainian IT industry development;
- good financing;
- developing Ukrainian inside IT market;
- reduce taxes;
- popularize the programming profession, because the demand of professionals is growing faster than the available number of programmers.

Actually, the government should establish closer relationships between Universities and businesses, and exchange experience with the world's universities, which prepare many IT professionals.

The biggest plus for IT-developers in Ukraine is low cost of communication service and Internet, but the inside market isn't developed. Inadequate financing of IT sector by Ukrainian government and an inefficient legal system impede getting a higher rating.

In terms of outsourcing we have a great potential. For example, even if the idea of IT product was born in Ukraine, it's much easier to develop it in USA, Japan or Germany, because these countries are like a source of orders for outsourcing (foreign company gives an ability for Ukrainian one to make a part of work). Our country is specialized on such kind of work. So, we are on a good IT position in the world, but only as a country of outsourcing, because we don't own the full IT product. In my mind, Ukraine should struggle for people's minds, because many of them are trying to emigrate, searching a better life.

Government should create the best conditions for IT professionals to realize their own talents, progress and work on interesting projects, get an equitable reward and develop the economy of our country. If everyone follows the rules and advice, which are described above, we will increase our confidence in the Ukrainian future of IT.

Kharlamov Vladyslav

Scientific supervisor – Tereminko L.H., senior lecturer

THE PROSPECTS OF WIRELESS CHARGING STANDARDS

Wireless charging, as the name suggests, is the way of transmitting power without the use of any contact surfaces.

Though it is a very promising technology, manufacturers rarely embed it into their devices and the occurrence of charging stations in public places is also very low. In general one of the problems of electronics is the lack of common standards.

Qi

Currently the most common standard for wireless charging is Qi. It was developed by WPC (Wireless Power Consortium). Power is transferred from the transmitter to the plate in the device. For successful charging a plate should lie in the parallel plane with a transmitter, and the distance between them should not exceed 4 cm. Charging is produced by electromagnetic induction.

The main difference from its competitors, which also use the principle of electromagnetic induction, is the frequency of operation. In case of Qi it is 100-205 kHz.

PMA

Another standard, which also uses the principle of electromagnetic induction, is PMA implemented by Powermat in 2012. It is not as popular as Qi, but focuses on the transmitter instead of the receiver.

Although PMA uses the same principle of charging (electromagnetic induction) as Qi, they still differ. It is the frequency of operation, which is 277-357 kHz.

Currently PMA is less popular than Qi and rarely used in mobile devices. Nevertheless, it is still promoted by the producers.

Rezence (A4WP)

It is a standard created by A4WP (Alliance for Wireless Power) using Rezence technology. It is even less popular than the PMA, but worth mentioning only because it uses a different energy transfer technology.

The creators are positioning technology as the "next step", because it can be used to charge the device at a much greater distance than in the case of the electromagnetic induction. Books or other household items will not be an obstacle. Multiple devices can be charged from one station creating a so-called smart charging zone around the dock.

The principle is based on the magnetic resonance effect. It allows to expand significantly the amount of the charge from one dock and charge multiple devices. Despite all the advantages of the technology, Rezence has not gained popularity. Technology is supported by Qualcomm, LG, Intel, HTC. The company signed a cooperation agreement with the PMA, so it is possible that Rezence will be the second generation of wireless charging.

Currently wireless charging standards are not widely used and far from mass production. Qi is the most popular standard but lack of "charging mats" and their high cost prevent its proliferation. Nevertheless the branch is rapidly developing, standards appear and being improved and we are envisaging the world of wireless power transmission.

Kodatskyi Oleksii

Scientific supervisor –Yashchuk O.P., lecturer

PAINT COATINGS

A coating is a special covering that is applied to the surface of an object. The function of using the coating may be decorative, functional, or both of it.

Paint – pigmented varnishes (enamel paints, enamel) or linseed oil (oil paint) with a viscosity required for spraying application, brushing, sprinkling or immersion are designed to produce top layers that provide the required performance, decorative and special properties. Paint and lacquer are the widest materials which are used to protect the steel. Paint is usually applied to pre-primed and previously puttying the surface, and sometimes directly on the surface.

Surface preparation for the application of the paint and lacquer at first is removing from the surface parts that are painted and removing of various contaminations. We need to make perfectly clean surface.

The removal of old paints from metal is performed by mechanical, chemical or ultrasonic methods. For cleaning the work surface by mechanical method both manual and electric tools – brushes, surface grinding machines, grinding cutters etc can be used. We only need to press the working part of the tool to the work surface and gradually move as the removal of the coating. During the chemical method we used special chemicals. The chemicals are applied to the surface by brush or broom. Penetrating into the paint, it softens it and pull it out of the grooves, after that the paint becomes soft and such coating is easily removed. Ultrasonic method is used for small parts that can be placed in ultrasonic baths ultrasonic generator is used with a frequency of 20-25 kHz. The details that we need to clean are placed in special meshing drums, which rotate in the bath with washing liquid, this liquid in the bath is heated to a temperature of 80°C.

There are such main methods of painting the surface: spraying (air or airless, dip), dipping (immersion) or contact carrying. Spraying is the widest used method of painting. This method enables to paint the surfaces of any size and form with a thin and uniform layer of paint, providing high quality. Method of painting with a brush (contact

carrying) is simple and does not require complicated equipment, but it is inefficient. This method is used when applying the first layers of coating on surface, when we need to paint holes, slots, grooves and other place inaccessible for painting by spraying. At coloring by dipping (immersion) the product is completely dipped in a bath of paint material, after putting out of the bath and draining of excess paint there formed a coating film on a surface. The method is simple and efficient, does not require difficult equipment and can be used in mechanized and non-mechanized production. Disadvantages of this method are: the painting can only be used to the product, the form and the surface of which promotes complete and uniform drainage of excess paint material, the possibility of painting by only one-color, the inability to obtain a uniform film thickness in the upper and lower parts, the low quality of the paint coating.

Paint drying is the process of turning liquid paint film into the solid paint coating. Drying is an important step in obtaining the paint coating and it is a complex chemical process: the solvent evaporation and oxidation or polymerization of the film. There are two types of drying: natural drying and artificial drying.

Kononova Oleksandra

Scientific supervisor – Shulga T.V., lecturer

ENVIRONMENTAL IMPACT OF AVIATION AND ITS SOLUTION

One of the main problems of the modern aviation is its harmful impact on the Earth's ecology, which can be recognized by atmospheric and noise pollution. The damage to the air quality is caused by full ($\text{CO}_2 + \text{H}_2\text{O}$ emission) or uncompleted (NO_x emission) aircraft fuel combustion and is characterized by ozone layer exhaustion, increase of global warming effect, etc. The augmentation of noise level, which results from airplane engine operation, can destroy the normal functioning of biological organisms, for example, human can get insomnia or hypertension.

The following measures can help decrease or avoid all above mentioned problems.

To begin with, the effective way to limit the amount of emission is to diminish fuel consumption. To achieve that, the changes in aircraft performance like construction lightening by applying composite materials and reducing interior elements' weight are used. Besides, improvement of airplane aerodynamic characteristics contributes to greater degree of engine efficiency that, in its turn, makes firing rate more economical.

Another method is to extend the use of capacious airliners, which can house more passengers than simple aircraft. Due to aircraft capacity, less number of flights will be required. This measure gives ability to save fuel and consequently reduce emissions.

An alternative way is to change the type of fuel. The alternative kinds of fuel do not emit harmful gases after combustion. For example, the combustion of biofuels generates only carbon dioxide that can be absorbed by plants. However, production of the appropriate amount of this fuel requires large areas for planting and large number of trees, felling of which, can lead to abrupt increase of greenhouse effect. Except the biofuels the hydrogen fuel can be provided by the plants, but the fact is that cheap production of hydrogen without oil has not been invented yet.

Moreover, the perspective solution of the problem is the use of solar batteries as the power plant. Solar energy in contrast with more traditional energy of fuel combustion

does not emit any gases or particles. But the main disadvantage of solar batteries exploitation is the necessity to use maximally extended aerodynamic surfaces and extremely light aircraft constructions to compensate batteries weight.

Last but not least, to protect people from the noise pollution it is necessary to provide strict organisation of residential development in areas with an increased noise level near the airports. The creation of sanitary-protective zone is the most effective measure to be taken.

All things considered, we can say that the ecological damage caused by aviation is still an actual problem. The research of improvements and new measures continues. It should be developed and supported by the world scientific centres as the issue of environmental pollution is critically important for humanity.

Korchan Ilyia

Scientific supervisor – Hurska O.O., senior lecturer

MODERN TRENDS OF COMPUTER SYSTEMS AND NETWORKS

It's impossible to imagine our daily life without Internet and digital technologies. With the development of information technology, we are available with new tools making habitual processes faster, easier, and cheaper. Network technologies are only at the start of the growth and really big innovations lie ahead. So, we can predict trends of computer technologies evolution today.

Network technologies consume too much energy, its volume increases, and experts agree that the future architecture of computer networks should be more energy efficient. The trend towards "greening" of the Internet will accelerate the growth of energy prices.

The development of sensor technologies will expand. We've used to think that it's comfortable to operate a computer with our hands. Today's millennial generation has learned to text at blazing speed. Each new iteration of technology has required new skills to use it proficiently. That's why the new trend towards no-touch interfaces is so fundamentally different. The basic pattern recognition technology has been advancing for generations and, thanks to accelerating returns, we can expect computer interfaces to become almost indistinguishable from humans in little more than a decade.

Internet will go beyond our planet. Today, the Internet has a planetary scale. In the plans - the interplanetary space, the cosmic Internet. The International Space Station is connected to the Internet, which speeds up work processes and interaction with the Earth station. This is the most perspective area of computer science.

Human will become a robot. Even today, we know examples of unmanned flying machines, vacuum cleaners, machines in Japan are working as a police- all these technologies perform their functions without human intervention. And every year the penetration of these vehicles will only increase. One of the main problems in computer technology is to imitate human thinking by computer. However, it's possible to connect the human brain with a cybernetic, computer system. According to experts, the first such cyborg will appear before 2030. He will be physically perfect, resistant to disease, radiation and extreme temperatures. And thus he will have the human brain.

And the worse - cyberwars. Cyberspace is now officially recognized as the fifth "battlefield". Today, under virus attack of hackers hit not just ordinary PC users, but also

industrial systems controlling automated manufacturing processes. A computer worm can be used as a spy, as well as sabotage of power stations, airports and other life-supporting enterprises.

National security is considered to be as one of the most essential issues in the developed countries. The current architecture of computer networks cannot provide such security. Therefore, anti-virus / web-protection and industry development of new security technologies will grow from year to year.

So, summing up, I can admit, that level of computer technologies development nowadays is high enough, but there is a great amount of unknown abilities in computer science.

Korol Kateryna

Scientific supervisor – Rozum M.I., senior lecturer

THE PROBLEMS OF INVESTMENT POTENTIAL IN UKRAINE

In the modern conditions of renewing of economic increasing in Ukraine the construction of a new development model based on investment principles, the deep integration of the industrial potential of the environmental and social components of the manufacturing process is required. An important step in this direction was the signing and ratification of the Association Agreement and Deep and Comprehensive Free Trade Zone between Ukraine and the EU. Implementation of the European integration intentions of Ukraine will be possible only with the effective mobilization and channeling significant investment of resources to the development of the industrial sector, which has become the driving force of economic growth in Ukraine.

Studies of foreign investments in Ukraine showed that the most negative impact on the process of foreign investments in Ukraine affects poor investment climate and imperfect legislation.

Also significant deficiencies in the attraction of foreign investments include the limitations (and sometimes lack of access) and the inconsistency of information about the objects of investment and the process of their registration, lack of a systematic approach to attracting foreign investment in the regions, cities and districts unresolved interests of investors and the national economy.

In conditions of existence of various economic theories of the investment process it becomes an important task of forming a unified approach to identification and assessment of investment potential.

The modern interpretation of the category of investment reveals the Law of Ukraine "On investment activity". So, investments are all types of property and intellectual values invested in business and other activities, which resulted in creating profit (income) or social effect is achieved.

Overall, the implementation of foreign investment issues currently are: uncertainty institutional and legal framework to attract private investment, including the development of public-private partnerships; the slow pace and lack of government support for the introduction of high technology and innovation; unfavorable investment climate in Ukraine, coming as a result of the global financial crisis, which led to the unavailability of maximum international financial resources; imperfect legislative provision on the protection of property rights, tax administration, land allocation,

entrepreneurial activity in general; insufficient state support for investment and the development of training programs and investment projects to attract public investment and more.

So, purposeful formation of the investment potential of Ukraine requires adequate investment needs of modern teaching approaches, perspectives of further research is the development of existing and development of new approaches and these recommendations following their approbation at modeling.

Kostin Volodymyr

Scientific supervisor – Budko L.V., assistant professor

MI-38 HELICOPTER

EUROMIL, a closed joint-stock company, was established in November 1994 to realize the MI-38 development program, a new generation helicopter, within the frames of international cooperation. CC EUROMIL is the general MI-38 program executing company, and as such it provides the control and coordination of activities of the main program participants. EUROMIL is entirely responsible for the MI-38 helicopter development, manufacturing, certification, sales and post-sale support.

JSC Mil Helicopter Plant and Kazan Helicopter Plant are the founders and shareholders of the EUROMIL enterprise. The MI-38 helicopter development was included as priority item into Federal Target Program: “Development of Civil Aviation from 2002 to 2010 and for the period up to 2015”.

The MI-38 helicopter exceeds for 2–2.5 times in terms of performance / economics the MI-8/17 helicopter, a basic helicopter, and fully complies with international airworthiness regulations. The MI-38 flight performance will allow this helicopter, in many respects, to replace the heavy lift out-of-production Mi-6 helicopter. The marketing analysis has proved the high cost-effectiveness of the MI-38 program.

The MI-38 maiden flight was performed on December 22, 2003. At present, the first MI-38 prototype is under flight test, while new MI-38 prototypes are being built and prepared to certification tests. The MI-38 main features are: multiple operation functions; advanced performance; Airworthiness Certification in compliance with AP-29, FAR-29, and JAR-29 Regulations; advanced flight safety and reliability; long lifetime and low operation costs; low noise level; high comfort level for flight crew and passengers; on-condition maintenance.

The MI-38 is a multi-purpose helicopter and can be operated in various versions. The passenger version of the MI-38 helicopter can carry up to 30 passengers. The helicopter has luggage bays, lavatory, and flight attendants' working places. The VIP version can provide transportation of high-ranking passengers in conditions of improved conveniences, and may be used as a corporate carrier. The cargo version can transport in-cabin load weighing up to 13,200 lb (6,000 kg) and carry 17,600 lb (8,000 kg) load on the external load sling system. To provide loading, hydraulically operated aft ramp, starboard side cargo door 4.7 ft (1.43 m) wide, electric hoist, rolling crawl and dolly jacks can be used. The combined cargo / passenger version can be used to transport both cargo and passengers. The SAR version can provide the search and rescue operations in the case of emergency on land and/or sea. The medical evacuation version can carry up

to 18 injured people and medical personnel. The maritime version is intended for flights over sea and may be used on sea vessels and mining platforms. The MI-38 may also perform forest-relating work, fire extinguishing and high precision construction operations. The MI-38 helicopter is equipped with integrated digital avionics system which provides Electronics Flight Instrument Functions (EFIS) with Colour Displays; Fully coupled automatic flight control via AFCS (Automatic Flight Control System) and Flight Director (FD) System; Flight Management System Functions (FMS); Health and Usage Monitoring System (HUMS); Ergonomically Proved Flight Crew Stations.

Kovalchuk Margarita

Scientific supervisor – Hurska O.O., senior lecturer

MODERN ASPECTS OF NATIONAL STRATEGY ON INFORMATION SECURITY

As the role of “information” becomes more significant in the nation’s life and dependency on Information and Communication Technology (ICT) increases, the government must take action to protect the nation’s information assets and ensure information security with a greater focus than ever before to protect the rights and benefits of the entire nation as an ICT user. It is also important to establish an environment whereby each entity across the nation can actively employ its own information security measures with full awareness of IT risks.

As socioeconomic activities become increasingly dependent on ICT, a wider range of devices are being connected to networks and information is becoming freely available beyond national borders. This in turn increases the risks concerning information security more than ever. Thus, it is necessary to establish an information security policy that can flexibly adapt to environmental changes, such as emerging information security threats and which can protect the life of the nation.

Traditional information security measures have tended to remain as symptomatic treatment that addresses individual risks whenever they arise, and often fail to address the actual cause. As ICT advances, information security measures that will bring fundamental solutions to such problems must be strategically identified. At the same time, utilizing organizational structures that enable entities to actively implement new information security measures must be established.

Innovations in ICT and ensuring information security must be carried out simultaneously. Development of cloud computing technology, new Internet technologies such as IPv6, intelligent home appliances, mobile terminals, the spread of electronic tagging systems, and major improvements in computing performance that could lead to a compromise of encryption – innovations in both ICT and business that utilizes information technology are progressing boundlessly. It is essential to establish an information security policy that accurately takes account of such innovation in ICT as well as the spread of other new technologies.

In the course of implementing information security policy, the government must be capable of managing any information security incident, should it occur, to ensure the nation’s safety and security. For this purpose, it is important to establish an organizational system to implement a comprehensive policy under strong leadership, through an

alliance of the concerned government agencies centered around the Cabinet Secretariat. In particular, international alliances must be reinforced as unprecedented borderless incidents are now more likely to occur.

In addition, the recognition of an “Accident Assumed Society” must be disseminated, and information security measures must be constantly improved to build up management expertise to survive in such a society. To do this, it is important to build up the systems to visualize and assess the results of the government’s efforts and feed back these results in order to improve future measures.

Krotinova Maryna

Scientific supervisor – Tereminko L.H., senior lecturer

THE BENEFITS OF CONTENT MANAGEMENT SYSTEM

The arrival of the Internet significantly influenced the way of sharing information. The requested data is available with a few clicks of a computer mouse. Supporting and updating websites needed knowledge of Hypertext Markup Language (HTML) and skills of operating graphic images.

Eventually, sites were becoming more complex, so creating a website and its management requires considerable knowledge and time, therefore the first tools have appeared to simplify this process.

CMS (Content Management System) is software that allows users to create sites and place or modify information on the website without the help of website developers. This suggests that the user does not need to have programming skills or knowledge of HTML, for example, to publish some news and articles on his website or add images.

The principle of CMS operation is separation of content and website design. Certainly website design changes rarely, while the content changes can occur every day and even every hour.

Therefore content management systems use the so-called CMS Templates - special "empty" blank pages with attached design and you have only to fill them with the information. The user can just use a special WYSIWYG-editor. The editor is very similar to the familiar word processing office applications, so a user can easily master it. In addition, a large number of system templates makes it possible to select a website design just in a few minutes.

Information is stored on a database, for example, such as MySQL and called from it when the pages are being loaded.

CMS does not require additional software because the system itself is placed on a server and accessed by the Internet browser. Content Management Systems support most of the widely distributed browsers such as Internet Explorer, Mozilla, Firefox, Opera, etc.

Like any other software, the management system can be either paid or free, either an open source or not. The benefits of paid systems are constant technical support of the manufacturer, constant updating of the product versions and improved security.

Access to the source code in the open source systems allows to change some CMS features to extend its functionality.

Due to prepared modules, CMS enables to change the structure of a website quickly and efficiently by integrating these modules. Modules also provide higher development quality, as they prevent errors in the code.

CMS offers a user-friendly interface for editing website content without requiring special knowledge in the field of web design and HTML-layout. CMS also allows not only to show customers the website content, but also to interact with them in a dialogue mode: visitors can register on the forum or communicate in the chat, leave their comments and wishes in the guest book. Thus, a content management system helps to get a skillfully designed and easy to use website.

Kulsha Yana

Scientific supervisor – Maksymovych G.O., senior lecturer

VIRTUAL REALITY

Virtual reality (VR) is the term used to describe a three-dimensional, computer-generated environment that can be explored and interacted with a person. Virtual reality is created by the software and presented to the user in such a way that the user takes it as a real-world environment. Virtual reality software uses graphics, sounds, and other tools to create an artificial world, through which a user may appear. The simplest form of virtual reality and 3-d images that can be interactively explore a personal computer and, usually by manipulating keys or a mouse so that the content image moves in some direction or increases or decreases the scale. But a virtual environment allows you to fully immerse yourself in the world with additional sensory information, such as audio or video, using their senses, which include virtual taste, sight, smell, hearing, touch, using Head-mounted display (HMD) or glasses that appear three-dimensional images. This person is able to manipulate objects or to perform a series of actions.

Virtual reality can be used for many purposes, providing huge benefits for us, such as health, education, military, architecture, art, entertainment, business, media, and sports. Virtual reality is applied for training where the operation is associated with an increased risk or with high costs such as airplane pilot, train driver, dispatcher, driver, etc. The list of VR applications is endless. From a medical point of view virtual reality as a great opportunity. In medicine, surgery simulation. is often used as a teaching tool and allows the surgeon to perform a "virtual operation". It is also used as a diagnostic tool when providing a more detailed examine of the human body as compared with the x-rays and scans. It reduces the time of treatment. Another popular way to use virtual reality is aviation. A three-dimensional plane allows the designer to test its prototype without having multiple labor-intensive and costly versions. It is cheaper and easier to make changes in the simulation rather than to design and build a new aircraft. Avia trainers are widely distributed among future pilots to convey not only skills, but also to prepare a pilot for the accident, affecting his senses to simulate panic, fear, depression, lack of oxygen and other things. A computer driving simulator and the game manipulator can train to drive a real car. Games, surgery and flight simulators are the most well-known areas of application of virtual reality, but other, less well-known areas of application include visualization, such as the geography of virtual worlds; research and treatment of

addiction; weather forecasting; historical, such as the re-creation of ancient civilizations; data analysis, for example, financial data.

Virtual reality is originally developed for use in military purposes. Now our soldiers can participate in a fight to the death, using virtual reality to make this fight easier. Only in virtual reality, you can train not only the body but also the spirit, resistance to emotions, fears.

Kupina Elina

Scientific supervisor – Tkachenko S.I., senior lecturer

OUTLOOK ON FREE TRADE AREA BETWEEN UKRAINE AND EUROPE

Ukraine has been negotiating with the EU on the issue of integration since 1999. However, Association agreement was signed only in 2014 which was a huge step toward the eurointegration. Although it does not recognize Ukraine as a future EU member, it describes free trade with European countries and proposes fundamental changes for Ukraine. To become a reliable partner for developed countries Ukraine needs to implement reforms in order to combat corruption and discrimination, to increase quality standards of Ukrainian goods, to facilitate the process of doing business etc.

However, let us concentrate on the regulation of the free trade area in details regarding the fact that on January 1, 2016 Deep and Comprehensive Free Trade Area enters into force. As we know, the main items of Ukraine's exports to the EU are made up of raw materials (iron, steel, mining products, agricultural products), as long as imports machinery and transport equipment, chemicals, and manufactured goods. The lowering tariffs on imports will create Free Trade Area opportunities for trade by taking into account that transition period for Ukraine is longer (up to 10 years) than for the EU which has already removed import barriers according to the Autonomous preferential trade regime 2014-2015.

First of all, in agriculture new market opportunities in the EU and higher production standards will attract more investment, encourage the modernisation of agriculture and improve labour conditions. Concerning industry, Ukraine will obtain the most benefits in machinery, textile and chemical sectors.

Secondly, the DCFTA is accompanied by the process of legislative compliance in the fields of financial, telecommunications, mail, and international maritime services as well. This means that EU investors in those sectors will find the same regulatory environment in Ukraine as in the EU.

The DCFTA also contains chapters about intellectual property and fair market competition. This document regulates pricing of energy goods (that are electricity, oil and gas) as well and formalize prevailing of market price.

That is it - euro integration is an opportunity to increase productivity, to get new technologies and be more attractive for investors and business partners. However, euro integration is not only about trade or travelling without visas. It is the issue of values, democracy, culture and way of living. Certainly, the way of transformation is not easy but Ukrainians accepted this challenge with hope for development and prosperity.

THE FOLLOWING DAY TECHNOLOGIES: SOLAR POWERED AIRCRAFT

Among the main directions of modern scientific researchers and technique genius investigations are economic feasibility, ecological safety, application of new kinds of technologies, design approaches, using new materials and alternative energy sources. Thus, the idea of the aircraft powered with a solar energy originated and has been developed since 1970s.

On 19th December, 1978 the Solar One piloted by C.F.I. Derek Piggott's assistant instructor performed the first flight for 3 minute duration in the UK.

The Gossamer Penguin with solar cells generating power of 2.5 kW maximum was developed by Paul MacCready's team (USA) in 1981. At this time in Europe Günter Rochelt was performing his first flight with the Solair 1. The airplane was covered by 2,500 photovoltaic cells that could generate power up to 2.2kW.

The Sunseeker was a solar motorglider crossing the USA in 1990 with Eric Raymond over a period of almost two months.

Designed by the team from Stuttgart University led by Professor Voit Nitschmann in 1996, the Icaré II had the wingspan of 25 metres and is covered with 26 m² solar cells. Its performances corresponded to the conditions of 'Berblinger' competition that it won.

The AeroVironment Company (USA) developed the Helios for NASA in 2001. This remote controlled aircraft with a wingspan of more than 70 meters has set an altitude record of approximately 30,000 metres.

In 2005, an unmanned airplane (drone) was designed by Alan Cocconi. It was the first time a drone was able to fly all night, utilizing the energy stored in the solar batteries mounted on the airplane.

The QuinetiQ Company drone 'Zephyr' having the mass of 27 kg and wingspan of 12m (England and USA) made a 336 hours and 22 minutes nonstop flight at an altitude of 21,562 m in July 2010.

An improved version of Solar Impulse, designed and constructed in 2009 by André Borschberg and Bertrand Piccard, the Solar Impulse 2 is the aircraft powered with a solar energy. The Solar Impulse 2 airframe is made of thin lightweight materials, its surface being covered with 17,248 monocrystalline silicon solar cells. In 2015 it started the first round-the-world flight using the solar energy source. The second part of the route from Abu Dhabi to Hawaii has been delayed to April 2016 because of damaged batteries. Solar Impulse 2 is revolutionary airplane with a pilot on board that flies through days and nights without a drop of fuel relying only on the sun.

In conclusion it should be said that the next era of science and engineering development will be oriented at principally new approaches and revolutionary decisions in designing and manufacturing vehicles meeting the requirements of safe, reliable, cheap and ecologically efficient operation. Following Bertrand Piccard's saying: «The world needs to find new ways of improving the quality of life. Clean technologies and renewable forms of energy are part of the solution», the first steps have been successfully taken.

WHY EVERYONE SHOULD LEARN TO CODE

Nowadays many people start programming because they like the rivalry, are passionate about computers and want to connect their lives with creating web sites, mobile apps or desktop programs. But even if you don't want to become a programmer for a living, it's still good idea to learn programming. Learning to program is going to improve your life. If you want to be a thinker and innovator who can bring ideas to life, coding is a great way. Perhaps the most important benefit of learning to program is the evolution of problem-solving skills. «Computational thinking» helps people to think abstractly and to divide the problem into smaller parts. Programming - is one way to learn this skill.

Another significant advantage in the study programming is the state of the labor market. Programmers are needed in any country and in large quantities. If you are a good or even an average programmer, it will be not difficult to find a well-paid job. Programming is also a tool for self-development, like mathematics and foreign languages. As well as learning a foreign language, learning to express thoughts, read and get new information, programming allows to gradually move from basic knowledge to deeper. The ability to think operationally is useful for general human development.

Along with reading, writing, basic mathematics and natural sciences, computer science can become a standard part of the curriculum. According to many experts, it will be a big step forward. Programming allows the virtual world to exist. Computers are everywhere in our lives, from education to economics. Without them, and without those programs in which they work, it would be hard to imagine today's technology. In such a situation we are beginning to realize that programming is everything. Even if we do not know how to program, however, programming is for us. The complexity of the problems in the world is increasing every year, and the system that we should create for their solution will require advanced skills of programming, such as abstract thinking, decomposition and composition.

Every day, the demand for computer technology is only growing, there are new ideas and opportunities. Gradually each profession begins to associate its activities with the computer, so sooner or later, everyone will need to be able to code. Learn how to write programs, and you will feel more free in the world of information technology. Become a programmer, and you will be limited only by your imagination!

Thus it can be concluded that the study of program can be used for various purposes, like a job or a hobby, space for the creation and the development of intellection.

FEATURES OF BANKRUPTCY SYSTEM IN ECONOMY

In the process of market economy many companies have found themselves in crisis. This is due to the influence of unstable environment and inadequate behavior of most businesses, which ultimately leads to bankruptcy.

Bankruptcy is a legal status of a person or other entity that cannot repay the debts it owes to creditors. In most jurisdictions, bankruptcy is imposed by a court order, often initiated by the debtor. Bankruptcy is not the only legal status that an insolvent person or other entity may have, and the term bankruptcy is therefore not a synonym for insolvency.

The purpose of bankruptcy is to provide a debtor a “fresh start” to allow the debtor to begin anew without the burden of its debts. A private individual, a corporation, a foundation and another legal person may be declared bankrupt. A legal person may be declared bankrupt even if it has been removed from the relevant register or dissolved. Also a decedent’s estate and a bankruptcy estate may be declared bankrupt.

When the court takes the petition of the creditors or the bankrupt enterprise into consideration, the procedure goes as follows. The court notifies all of the creditors about the beginning of bankruptcy procedure and requests them to present all unsatisfied claims to the debtor including those due to at future dates. This information is processed and presented to the creditors’ meeting. During the meeting the creditors decide upon the future ‘fate’ of the debtor. As was mentioned, the debtor enterprise may be liquidated or reorganized. Liquidation means the sale of all assets. Reorganization means postponing the debt repayment and giving the chance to debtor to continue its activity. In both cases the administrator of the assets is appointed. The appointment of the administrator usually means the dismissal of the enterprise’s management. In some cases the management can continue to perform its duties under the auspice of the administrator if the last views it as helpful in maximizing of the liquidation value. The administrator reviews the recent activity of the enterprise and may, with the court approval, annul the contracts, which it takes as fraudulent or illegal.

In the case of liquidation the administrator evaluates the assets and develops the liquidation plan. Later, the assets are sold and the creditors are paid according to their priority. When no assets are left, the administrator reports to the court and the latter stops the procedure. All debts are cancelled and the notification of the liquidation of the debtor is put in the national register of the businesses. If the creditors view the current value of firm to be higher than the liquidation value, they restructure its obligations and let the enterprise continue its activity under the control of the administrator or without it.

The term of consideration of a bankruptcy case is formally limited to seven months, after which a court should make a decision on the rehabilitation of a debtor, either recognizing that debtor as bankrupt and starting a liquidation procedure or terminating the case. Nevertheless, in practice such litigations can last more than two years.

A BETTER FRONT-END DEVELOPER

Web Front-end developers are specialists, who have good knowledge of web programming of a client side part of a web-site. Their objective is to create user-friendly and attractive web-design and interface, which are indicators of quality software. The ability to use right web design is a big advantage for the developer. Front-end programmer should have very good knowledge of HTML, CSS, JavaScript programming language and its framework, like JQuery as well. A good Front-end developer also knows server-based languages to understand the relationship between a client-side and a server part.

Nowadays, with the rapid development of Internet technologies, many developers ask themselves questions about using different plugins, libraries and techniques of a good development. All that can be changed by implementing few points into our routine. Here are some tips that might help you to become a better front-end developer.

Plan your projects. A very common mistake even with experienced developers is that most of them don't like planning. It's not so interesting, somebody even doesn't know how to do it. That's why we often don't care about this step. A good planning has many advantages, which can help you to save your time, stay calm when the deadline approaches, comfortably finish on time every day, keep your head clear and focused.

Learn to anticipate future changes in technologies. One of the main differences between front-end and back-end code is that back-end code is often performed in the environment under your control. Front-end is beyond your control. A platform or a user device can be reversed at any time, so your code should be able to handle it.

Read specifications. Bugs always were, are and will be, but when two browsers handle the same code in different ways, people often suggest not checking that the so-called "good" browser is right, and "a bad one" is wrong. But this is not always the case. And if such an assumption is wrong, all your changes will almost certainly lead to collapse in the future.

The so-called "excellent" front-end developers - people who are on a front line, who adapt new technologies before they become popular, and even contribute to their development. If you develop the habit of looking into specifications and imagine how the technology will work even before its appearance in all browsers, you will become a part of a selected group and will be able to understand and influence on the development of the specification.

Write about what you have learned. There are a huge number of reasons why it should be done, but the most important is that it makes you better understand the issue. If you are unable to explain how something works, there is a chance that you imagine badly it yourself. Very often you even don't know when you do it, before trying to express your words on paper.

Using these tips will help you to grow as a web developer and become a better one.

THE PROBLEMS OF DEVELOPING THE UKRAINIAN AVIATION INDUSTRY

In modern conditions for future development of Ukrainian passenger air transportation market and for increasing the amount of passenger and cargo air transportations it is necessary to attract investments both at the micro (investments of some businesses and individuals, credit and financial institutions and others), and at the macro and supranational levels (investment resources of multinational entities, governments of individual states, international economic and monetary organizations).

Ukraine has a very strong potential in the aviation area. In particular, on its territory are allocated two largest aircraft manufacturers of the CIS – The Kharkov State Manufacturing Company and The Antonov Aeronautical Scientific / Technical Complex which are the leaders of Ukrainian aircraft building. In general, as of July 2014 in Ukraine there are 26 organizations that have a valid Certificate of aircraft Developer. In total 25 Ukrainian companies have the right to design and develop new models and technologies of aviation equipment. On the Ukrainian air transportation market (as of 31.10.2014) current certificate of the operator has been given 88 airlines, only 43 of which have the right to provide passenger carriages.

Innovative direction of investments will ensure radically improved products of transportation services with new properties, improve the quality of non-aviation services and generally improve the competitiveness of air businesses.

Today there is economically unreasonable governmental influence on the investment activity of airlines. Intensification of assistance policies for attracting foreign investments are positive trends. Government regulation of investment activities should be aimed at increasing investments in manufacturing by using both as from public funds and own entities investment resources and also attracting foreign investments in Ukraine's economy.

We can conclude that the Ukrainian air companies cannot operate without financial support for innovations implementation. However, they face with numerous problems of funding caused by negative factors. Financial leasing may be the main solution of all existing problems in Ukraine today The use of this funding mechanism is quite successful in different countries with different levels of economic development. It is strategically important for Ukraine today.

INNOVATIVE DESIGN TECHNOLOGIES FOR PHYSICALLY DISABLED

Prosthetics has reached unprecedented heights over the last decade. Modern prosthesis is not just a mechanical replacement of an organ. Today it can become a unique part of the body, which gives new, unprecedented opportunities. Modern smartphones are not just mobile phones with advanced features and functionality. With your device you can control the car, robots, household appliances and even electric prostheses. In 2014 American company Touch Bionics has released i-Limb - the human hand prosthesis. It can be controlled with the help of the forearm muscles like similar devices. But with a smartphone it gets more greater functionality. Smartphone allows i-Limb perform one of dozens of programmed actions such as tying shoelaces, taking and putting objects, typing on the keyboard and even writing with a pen.

Another science company Second Sight has found its own way to the prosthesis. It provides technology that can return man's sight. Specialists of the company developed an innovative technology that allows a blind person to see the surrounding reality image. This technology is based on the creation of glasses with a built-in camera.

Bionic Ear is a successful example of the use of 3-D printing in prosthetics. It is not about the ear, which can only replace the lost part of body, but also restore a person's hearing. A team of scientists from Princeton University designed bionic Ear prosthesis. In this artificial body they used hydrogel, silver nanoparticles, a few wires and live calf cells. The interaction with the human body turned calf cells into a natural cartilage that connects the human skull with a new body. To restore a person's hearing, there is a hearing aid in the artificial ear.

The model of trendy prosthesis is created on a computer and printed on a 3-D printer. The price of this accessory ranges from four to five thousand dollars. Modern prostheses, despite their advanced level of functionality, have a serious technological disadvantage - they do not give a person the tactile sensations and perform only simple mechanical action. But in the future it can be changed. It has already appeared in Bionic Hand prosthesis with tactile elements. Bionic Hand can give a person the information about the size and shape of the object he touches to, as well as a representation of its texture. Device electrodes are connected to the person's nervous system.

The technology has only started to develop. But it is already a success. And in the future it will reach even higher levels. Project Open Hand Dextrus sees the future of prosthetics in 3-D printing. After using these technologies it can be quickly and cheaply to make even the most complex designs. Open Hand Dextrus involves creating printed 3D-printer electric prosthesis, which will cost only about \$ 1,000. Thus, they can be fully functional devices. As an example, the creators of Project Open Hand Dextrus printed a prosthetic hand of Iron Man. All specifications and drawings Open Hand Dextrus posted on the Internet that means that anyone anywhere in the world can benefit from the results of the charity project. Many experts are optimistic about the future of prosthetic limbs and modern technologies will help people with it.

CLOUD COMPUTING PREDICTIONS FOR 2016

The speed of innovations convinces us that organizations that do not keep track of the latest news of their scope, expose themselves to a serious risk. Being at the forefront of technological development means to watch out for them and anticipate trends, managing, at the same time, at any time, to benefit from the use of the latest tools and technologies that the market offers. Today, the use of cloud technology becomes a standard solution.

The main cloud computing predictions are:

1. Cloud management is a new challenge for business. For businessmen the recognition of cloud technology is the emergence of new business challenges. Now organizations have not to think about how to implement it or that cloud infrastructure, but how to learn to manage it. Cloud computing will enable companies of all sizes and industries to address simultaneously two key challenges: a quick access to the technological solutions and reduction of IT costs.

2. The transition to an open-source. It used to be difficult to imagine that large organizations will build their IT infrastructure on open source platforms. Analysts say that competitive IT advantages play an increasingly important role, and the use of open source solutions can give companies such advantages. Open-source technologies allow organizations to readjust quickly, fit the requirements of the market, without building all key infrastructure from scratch.

3. Oracle Cloud. We can expect that in 2016 Oracle will announce impressive growth figures of its many cloud services, from corporate brilliant set of SaaS-applications to infrastructure-as-service. Soon everyone will be able to download Oracles new program to improve business. This program is to help employees of companies manage the cloud, they will be able to validate their experience using Oracle Cloud. The first year of participation in the program is free. Oracle Retail Science Services and Oracle Retail Insights Services solutions enable retail companies to understand better individual preferences and consumer behavior models. Oracle offers a full support of the entire life cycle of cloud computing for different implementation models. The new solution of Oracle Retail Store Point-of-Service Workstation combines hardware and software, allowing employees in stores to speed up the service via mobile points of sales.

4. Cloud as a basis of IoT. The Internet of things is a safe bet in any list of predictions for the end of the year. In the past year, most cloud providers introduced the functionality and tools specifically designed for building the server IoT applications. With the development of Internet of things more and more objects will be connected to the global network, thus creating new opportunities in the field of security, intelligence and control, opening new and wider perspectives and helping to improve the quality of life.

The world market of Cloud solutions and services is growing so rapidly that it is quite difficult to predict its rate in practice.

INTERNATIONAL ECONOMIC RELATIONS OF AZERBAIJAN

Short-lived democratic Republic of Azerbaijan succeeded to establish diplomatic relations with a number of countries. The process of international recognition of Azerbaijan's independence from the collapsing Soviet Union lasted roughly one year. Full diplomatic relations, including mutual exchanges of missions, were first established with Turkey, Pakistan, USA, Iran and Israel and eventually with all the rest of the world. Today Azerbaijan has diplomatic relations with 158 countries so far and holds membership in 38 international organizations.

After independence in 1991, Azerbaijan became a member of the International monetary Fund world Bank European Bank for Reconstruction and Development. Azerbaijan is also an important economic hub in the transportation of raw materials. Azerbaijan has large oil gas deposits in the Apsheron Peninsula. Baku-Tbilisi –Ceyhan oil pipeline Truboprovod (PTS) became operational in may 2006 held more than 1774 kilometers through the territory of Azerbaijan 440 kilometers Georgia 260 km and Turkey 1114 km away. The PTS is designed to transport up to 50 million tons of crude oil annually and carries oil from the oil fields of the Caspian sea to global markets. Azerbaijan exports oil to 33 countries, among them countries such as USA, Germany, France, China, the UK, Italy and Spain. Currently also exports oil through the pipeline Odessa-Brody After Independence in Azerbaijan many foreign companies appeared and we can conclude that the Azerbaijani economy through sustainable development of foreign economic relations steadily thriving foreign policy ensuring national interests of the country is an important task of each state. The Republic accounts for 70 per cent of the country's output of oil equipment. Azerbaijan maintains economic ties with 60 foreign countries.

Industry plays a leading role in the Republic's present-day economy. Country has oil refining, chemical, petrochemical, gas, engineering, and building materials industries. The production of gas, sulphur, and sodium sulphate is significant. Such old industries as oil extraction, metalworking and cotton-cleaning have been completely overhauled.

However, it would be wrong to say that Republic's economy has a lop-sided orientation to oil extraction alone. Fuel is the basis for the development of more than a hundred industries. Energy- intensive industries stand out in Azerbaijan's economy, although there has been a shift of late towards the science-intensive sectors. The wide range of industrial products includes metals, pipes, machine tools, air conditioners, electrothermic equipment, engines, ships, precision instruments and computers, and also items manufactured by the oil refining, chemical, consumer goods and food industries, to mention but a few.

This applies to the Republic of Azerbaijan, seeking to find its rightful place in the modern system of international relations. Modern foreign policy of the Republic of Azerbaijan aims to establish and develop with all states of the world equal and mutually beneficial relations and the most effectively use these relations to strengthen the international position of Azerbaijan and to ensure domestic stability.

NEW SYSTEMS FOR HELICOPTERS

Nikolai Kamov's group of designers have developed multipurpose helicopters which have proved their main advantages – great manoeuvrability, small size, high payload and great effectiveness. The coaxial system has also enabled the designers to dispense with a tail rotor (which usually consumes about 10 per cent of the power developed by the engine). The coaxial rotor of the KA-226 will be produced in four versions – rescue, research, ambulance and ecological (monitoring the environment).

It will be equipped with foreign manufactured avionics (Sextant Avionique), and powered by two Allison 900 hp engines, each with a 3,500 hour service life. It will have an effective range of 600 km and five hours endurance.

Honeywell, Sikorsky and Universal Avionics have teamed to develop a cost-effective solution for landing helicopters in poor visibility conditions.

Honeywell is using technology developed for its synthetic vision system to help pilots "see" through sand and dust storms. The sandblaster system for helicopters will help pilots land in the brownout conditions. As a helicopter approaches the ground, dust blown up by the rotor blades obscures the pilot's view of the landing zone.

Sikorsky and Universal Avionics developed the core system based on the satellite landing system (SLS). The SLS uses a ground reference station and measurement units to calculate differential corrections for each of the GPS (global positioning system) satellite signals. The corrections are transmitted by VHF (very high frequency) data link to the helicopter, providing the pilot with pinpoint accurate position information for high precision approaches.

Sikorsky Aircraft Corporation is converting a UH-60Z Black Hawk helicopter to a firefighting configuration. A removable tank is fitted to the machine, which utilizes extended landing gear for ground clearance. The tank will carry 1,000 gallons of water or fire retardant.

The advantages of the Firehawk are its ability to drop fire suppressant precisely over the target area and its rapid transit speed to and from a water source.

Kamov offered the KA-50-2, a two-seat multi-role helicopter, capable of air-to-air, air-to-ground, reconnaissance and other missions in day/night conditions and all weathers. Kamov is responsible for the airframe, engines and flight systems, the avionics system, the full glass cockpit.

At the heart of the helicopter's equipment is the display processor (DP) which controls the management of the avionics, the fire control system, navigation and communication functions. Kazan Helicopters serially produces three main modifications of the Mi-8 rotorcraft: Mi-17-1V, Mi-17-V5, and Mi-172.

The Mi-172 is a passenger version intended for transportation of 26 passengers. Special VIP-versions for 7-11 passengers are also produced. The Mi-17-V5 is a transport version. It is intended for cargo transportation inside the cabin and by the external sling. It can also be used for the transportation of 36 passengers.

The Mi-17-1V is a multipurpose helicopter. On the basis of this modification, various versions (military, flying hospital, etc.) can be produced.

SYSTEM ANALYSIS

System analysis, knowledge of the scientific method, which is a sequence of actions on the establishment of structural relations between variables or elements of the system. It is based on a set of general, experimental, scientific, statistical, mathematical methods.

In practice, it is applied with the use of the following methods:

- 1) theory of operations research that allows to quantify the research facilities;
- 2) analysis of research facilities in the face of uncertainty;
- 3) Systems Engineering, which includes design and synthesis of complex systems in the study of their functioning.

System analysis emerged in the era of the development of computer technology. The success of its application in solving complex problems is largely determined by the capabilities of modern information technology. The value of the system approach is that consideration of the categories of system analysis provides the basis for a logical and consistent approach to the decision making. Efficiency of solved problems with the help of system analysis is determined by the structure of solved problems.

All problems are divided into three classes:

- 1) well-structured or quantitatively formulated problems;
- 2) unstructured or qualitatively expressed problems containing only a description of the most important resources, attributes and characteristics, quantitative relationships between them are completely unknown;
- 3) poorly structured or mixed problems containing uncertain aspects that tend to dominate.

To solve the problems of poorly structured methodology systems analysis is used as well as decision support systems (DSS). Decision making process includes the following steps:

- 1) formulation of the problem situation;
- 2) setting goals;
- 3) determination of criteria to achieve the objectives;
- 4) building models to justify decisions;
- 5) search for optimal (acceptable) alternative solutions and reconciliation of the decision;
- 6) preparation of the solution to implement;
- 7) approval of the decision;
- 8) managing the progress of implementation of the decision;
- 9) check of efficiency solutions.

NEW TRENDS IN IT DEVELOPMENT

New technologies are a driving force in addition to the existing powers of the world market. Information product (IP) appears in the form of software, databases and expert support services. IP in the form of various types of information is a source of human knowledge. The ability of IP to the interaction of between all the physical and logical elements of the system is one of new trends developing in IT nowadays. One of the most important factors to ensure the interoperability, the emergence of new standards for software and hardware, displays, databases and networks, which resulted in the standardization process.

Recently, in connection with the enlargement of the enterprises and the increasing expertise in the integration of different platforms standardization of IP from different vendors has been held during the design and creation of IP.

Globalization is another driving force in IT development. One of the main reasons for the intensification of global competition is to spread the demand for specific types of IT in the world scale. The presence of five major factors responsible for this process: varying degrees of expertise in the IT field, which determines the rate of propagation, which vary widely depending on the application and peculiarities of the country; the ratio 'cost – effectiveness of IT; government support; standardization; comparative advantages coexisting and interchangeable technologies.

Providing business includes the consumption of IT products and services in the implementation of various business activities: procurement, manufacturing, service, marketing, physical distribution of products and other steps in the creation of added value.

One of the hugest problems of our civilization is imminent global ecological catastrophe – result of negligent usage of nature resources of our planet for satisfying humanity needs. To change such situation we should gradually and inevitably rebuild needs activities chains while preserving the environment so that these needs can be met not only in the present, but also for generations to come. The IT is not an exception.

The concept of information technologies construction in a "green way" aims at the development of infrastructure on the environmentally sustainable basis, when along with increasing of computational power of IT products goes decreasing of resources consumption for they producing, usage, maintaining and recycling. Green IT encompasses itself the next development approaches that can led to more sufficient usage of nature materials and cost:

Software and deployment optimization is a process of making more effective program systems, that can be achieved using more efficient algorithms, relocating computational resources and using virtualization technologies.

Power management is a mechanism for controlling the power use of personal computer hardware that turns off the power or switches the system to a low-power state when inactive.

Materials recycling is a careful treatment of used computing equipment can keep harmful materials, and replacing equipment that otherwise would need to be manufactured, saving further energy and emissions

Telecommuting is the work arrangement in which employees enjoy flexibility in working location and hours.

THE INFLUENCE OF IOT ON ITS SPHERE ECONOMICS

Internet of Things (IoT) is the concept, formulated in 1999 that implies a wide application of RFID tools for interaction of physical objects between themselves and with the external environment. IoT is considered to be a rising trend in information technology since 2010. Nevertheless, how can Internet of Things influence the economics of IT sphere? Let's take a look at the forecasts of some world known magazines and companies.

The IoT influence on the economy grows in the extent that consumers, business, city government, medicine, etc. find new ways to use these technologies. For example, the number of "smart things", according to MIT Technology Review Business Report, by the 2020 year will exceed the number of smart phones and PCs. In world practice, investments in IoT for 2013 were estimated approximately to \$1.2 billion and for the first quarter of 2014 - more than \$ 850,000,000. Speaking about Gartner estimations, the total revenue from services related to the IoT will be \$69.5 billion in 2015 and \$263 billion - by 2020.

Taking into consideration the forecasts of the BI Intelligence research firm, the Internet of Things will be the largest market in the world in the number of electronic devices. It will be bigger even than total volume of the smartphone, personal computers, tablets and wearable gadgets markets. The economic effect of the development of IoT-sector will be expressed by \$1.7 trillion. This amount will include the sale of software and hardware, equipment installation costs and management services.

In May of 2013, the head of Cisco company John Chambers said: "The new technology market, associated with the Internet of Things, will generate \$14 trillion in the next decade". According to him, this statement was based on the Cisco research. In May of 2013, the company also presented a new report on Internet trends. According to that forecasts, there will be about 2.8 billion cars "with the IoT" by 2017, that will be 30% of all devices connected to the global worldwide network. For comparison, it was 960 million and 17% respectively in 2012.

As a conclusion, Internet of Things is considered the key trend of the world economy in the coming years. It is a new stage of development of the Internet that significantly enhances the collection, analysis and distribution of data. In this sense, the IoT has an enormous economical influence.

IMPACT OF GLOBALIZATION ON INTERNATIONAL ECONOMIC RELATIONS

It is believed, that the process of globalization began long ago during the formation of the world economy. However, only in the late XIX - early XX century globalization reached such a development, that has significantly affected the economies of most countries of the world. And at the present stage of development of international economic relations globalization is one of its distinguishing features.

Globalization can be called a leading trend in today's global economy, because it affects all the countries of the world economy, even the most underdeveloped. It manifests itself in virtually all the spheres of life, but most notably its influence is on the economy. The process of globalization has already made and, most importantly, continues to make numerous changes in the structure, organization and functioning of the economic sector and its components.

Globalization is understood as a universal global interdependence of nations, businesses and people in the context of open system of financial and economic, social, political and cultural relations based on modern communication and information technologies. It is important to assess globalization as an evolving process, that encounters difficulties and contradictions.

In the economy sector globalization has developed most dynamically. Now in the connection with the process of globalization TNCs, states and their groups (EU, NAFTA, and so on.), and the most authoritative international economic organizations (IMF, WTO, World Bank and so on.) play a leading role.

TNCs - are international firms with their business units in two or more countries and manage these units from one or more control centers on the basis of decision-making mechanism, which allows to coordinate policy and overall strategy, allocating resources, technologies and responsibility in order to achieve the best result - profit.

Sharp growth of TNCs in recent years has been explained by many reasons, among which in the first place is a competition that forces to reduce costs by increasing the scale of production and introducing the latest technology, to search for new markets, cheap labor, to place production, where taxation is lower, etc.

TNCs are the main driving force of globalization, their role is significantly increasing in the world economy at the same time oppressing nation states. However, the role of TNCs in the globalization process is not straightforward, as they exacerbate the contradictions between the national and global economies. The expansion of TNCs would be simply impossible without the revolutionary achievements of modern technological progress, liberalization and opening up of national markets. There is a significant increase in the number of parent companies and, accordingly, subsidiaries and affiliates. TNCs are expanding their activities by increasing the scale of production, through the use of high-tech products. Direct investments play an important role in their activity.

Thus, globalization is a complex, evolving process, covering all the countries of the world economy and seriously affecting all the spheres of life, including international economic relations.

CHROMIUM VS CHROME

Chromium is an open source Web-browser developed by Chromium community, Google and other companies such as Opera Software, Yandex and NVIDIA. As developers state, the Chromium is designed to provide users with fast, safe and reliable access to the Internet, as well as with a convenient platform for web applications. Google Chrome and some other browsers are based on Chromium.

Chromium employs Blink engine to display web pages providing extensive support for HTML 4.01, xHTML 1.0 (2nd ed.), XML 1.0 (4th ed.), SVG (level of support in version 6 is estimated as Advanced +), SVG fonts, SVG filters, SVG SMIL animation, MathML, ECMAScript, DOM, providing support for about 95% of the existing standards. Developers actively implement support for HTML5 specification by implementing support for the canvas, the tag <video>, <audio>, Web applications, geolocation, WebGL, Web SQL Database and a number of other standards being actively developed. Chromium has also passed tests CSS3 Selectors Test and Acid3.

Chromium and Google Chrome are different browsers. Their main distinction is that Google Chrome is a closed corporate project, Chromium is an Open Source project aimed at creating an easy but at the same time the fastest web browser. The main thing is that Chromium is the basis for creating Chrome.

Chromium is an open source Google project. The developer is the community, whose members constantly offer and implement a variety of ideas in the browser. Google chooses the best of them for Google Chrome. In other words, Chromium can be considered a kind of Chrome beta-version. By the way, it is the basis for developing other browsers such as the Amigo, Rambler Nichrome, QIP Surf, Yandex, etc.

Chrome is automatically updated using the Google Update process while Chromium is not. Chrome also provides the feature of sending utilization statistics and failure reports to Google. Such feature can easily be enabled / disabled in the browser settings in the section entitled "Personal data".

The company claims that reports and user statistics are needed to improve browser performance and fix bugs. The concept of "user statistics" includes only summary of pressing buttons, settings, and the use of memory. Developers say that any personal information like the web page URL is not sent to the company.

The fact that Google has publicly stated about gathering some of the user data, caused a great wave of indignation. But the fact proves the honesty of the company. Almost all Web browsers collect information about their users, but conceal the fact. Chromium claims that it does not surveil users.

Chromium Code base served the basis for creating a number of alternative web browsers with complementary features as compared to the main branch of development. The example Opera starting with version 15, uses the Blink engine (originally it used its own Presto engine).

So, Chromium is not Google Chrome, it is a separate browser. Inside it is the same as Google Chrome, but without built-in codecs, plug-ins, Google Update, statistics and reports sending system.

UNRELIABILITY OF NARRATION IN ENGLISH GOTHIC FICTION

The issues that provoke high interest and are researched by many scholars are still urgent and arguable so far as the theory of unreliable narration is new and is not well-founded. This creates the relevance of the chosen subject. The originality of the topic is based on the suggested paradigm of the determination the degree of unreliability. The object of the study is a diversity of the narrative types. The subject of the scientific research is a use of distinctive features in order to prove the unreliability of the narrator in Henry James' *The Turn of the Screw*.

Many scholars have researched the problem of reliability of the main character in Henry James' novella *The Turn of the Screw*. Before the reader is aware that there might be an unreliable narrator and that he or she should pay attention to some special features in the text, it is rather easy to believe that this is a simple ghost story and nothing more. It is reasonable to assume that the governess' sanity is not in questions even though there are some clues that she has rather active imagination.

The question is how to define whether the narrator is reliable or not. The following scheme is suggested in order to determine unreliability:

1. To find the main character and to identify does he/she take part in what is going on.
2. To define whether the narrator tells the story in the first-person.
3. Then it should be pointed out if the protagonist expresses his/her own feelings and emotions or just enumerates facts.
4. The last step is to find in the text the distinctive features suggested below.

The distinctive features of the unreliability of the first-person narrator are supposed to complete the scheme: personal pronouns *I* and *we*; parentheses; Present Simple, Future Simple; The Conditional Mood; modal verbs; interrogative sentences; stylistic devices.

Personal pronouns *I* and *we* are used to show the untruthfulness of the character's words as he/she is a participant of what is going on. Parentheses like *I suppose, maybe, probably, perhaps* identify the misgivings and intensify the readers' doubts about the reliability of events. The usage of the tenses indicates the subjectivity of a narrator. Modal verbs like *may, must, should, need to, would* stand for suppositions and confidence of a character. The Conditional Mood implies conjectures and doubts. Interrogative sentences, especially rhetorical, return the readers in the reality forcing them to think about the possible answers. The stylistic devices serve as assistants in identification of the reliability of the character.

The problem of identifying the untrustworthiness of the character is still urgent and many scholars are sure that this phenomenon can't be analyzed according to the linguistic, so this scientific research suggests the possible approach in order to distinguish the reliable narrator in the fiction.

THE IMPORTANCE OF THE AUTOLAND IN AVIATION

Autoland, in aviation, describes a system that fully automates the landing procedure of an aircraft's flight, with the flight crew supervising the process. Such systems enable aircraft to land in weather conditions that would otherwise be dangerous or impossible to operate in. The first experiments on the automation of landing began in the UK since 1923.

The first automatic landing using radio equipment was completed in 1948. Since the end of the 50's the process of intensive research and the introduction of automated landing systems have begun in different countries. Somewhat later for passenger aviation International Civil Aviation Organization has established three categories of weather minima regulating the degree of automation of landing.

First, the category of the International Civil Aviation Organization was based only on the terms of decision height or the height of the cloud base and visibility range on the runway. In the future, the requirements became tougher and supplemented, such as wind speed restrictions were introduced along and across the runway. When working on the automation of landing in parallel developed two concepts: the pilot - an active link in the automated landing system, it makes decisions and in the management; Pilot - a passive element, it only monitors the serviceability of the automatic control system.

In automatic control systems designed using the first approach, the pilot carried out a number of functions for the management of aircraft, such as the demolition of the lateral parry. In the second approach developed automated landing system, fully automating the execution of individual stages and across the landing. This automatic landing system is implemented in the "Buran". Consistent application of these concepts led to the development and implementation of automated landing systems, the relevant category III of the International Civil Aviation Organization, in which the remains of the pilot the right decision to go-around and switching to manual control plane.

Autoland system consists of an integrated glideslope receiver, localizer receiver, and GPS receiver as well radio to receive the localizer and glideslope signals. The output of this radio will be a "deviation" from center which is provided to the flight control computer; this computer which controls the aircraft control surfaces to maintain the aircraft centered on the localizer and glideslope. The flight control computer controls the aircraft throttles to maintain the appropriate approach speed. At the appropriate height above the ground the flight control computer will retard the throttles and initiate a pitch-up maneuver. The purpose of this "flare" is to reduce the energy of the aircraft such that it "stops flying" and settles onto the runway.

So the need for automation of landing emerged from the need to expand the operational meteorological minimum aircraft while improving safety performance of landing, as when landing is almost 50% of all accidents.

SOME ASPECTS OF MODERN CORPORATION MANAGEMENT

Analysis of existing management schemes of the world Transnational corporations (TNC) allowed to make the following conclusions:

- there are two actual management schemes, which have different approaches to the implementation of the oversight function in society;
- at the EU level there is no fixed unified management scheme but the ability to choose the control scheme by states (EU members) is provided according to the tradition of corporate law of each of them;
- at the same time some differences in the regulation of corporate relations are kept, particularly in countries with a three-level management of the company where they are mostly regulated at the legislative level compared to the countries with two-level scheme, where a significant corporate act and judicial control play more important role;
- in the two-level management scheme of the company executive body is more independent in its activities while in the three-level scheme the executive body is controlled either by a general meeting or by a supervisory board.

It is proved that today the reformation of corporate law in Ukraine is not only about taking into account the general trends of corporate law, but also ensuring the effective functioning of loan institutions. Thus, a significant narrowing of the general meetings powers is only possible in countries with developed alternative means of protecting the rights and interests of shareholders – Institute of derivative lawsuits, board of directors' disqualification, property liability. In Ukraine such institutions are not developed and even not advised.

Since in Ukraine today there is no effective external control, the special importance is gained by the internal control implementation by the company management, which is possible only at strengthening the participation of shareholders in executing control over the decision-making executive body. Otherwise, the consequences of an uncontrolled corporation may be fatal for the company.

Firstly, lack of the economic interest of management leads to the inefficient property use.

Secondly, profits concealment for own enrichment strikes the reputation of the enterprise and the economy in general.

Thirdly, improper use of existing monetary stocks and various funds with the same purpose mentioned before (such as sinking fund) leads to the company performance decline, to the impossibility of the fixed assets upgrade, to the moral obsolescence and wear, and in such situation the company is not able to withstand the competition at the market and is slowly disappearing.

Fourthly, the lack of a proper control system over the activities and targeted use of resources causes too cautious attitude of potential investors for investing money in the revival of domestic business.

As a result, common measures to improve the quality and effectiveness of corporative management in joint stock companies and corporate associations the implementation of which can increase the performance of corporations are suggested.

BYPASS TURBOJET ENGINE FOR AN AIRCRAFT

At this stage of development of civil aviation one of the main problems is fuel saving. Nowadays in the world market of energy resource, costs on fuels and lubricants make up a large part of the total costs of enterprises that operate with aircraft equipment. Therefore, taking into account these factors, a priority in the development of modern aeroengine manufacturing industry is to provide engines with improved economic parameters. The most widespread in civil aviation are bypass turbojet engines that satisfy the requirements of passenger and cargo aircrafts. They have the main advantage - high efficiency at high subsonic flight speeds.

Bypass turbojet engines were generally accepted due to the lower specific fuel consumption than in conventional jet engines and the possibility of their usage in aircraft with higher flight speeds than in the aircrafts with turboprop engines. Having sufficient thrust and acceptable compactness, they can be placed both on the wing and the tail unit of the aircraft. In addition, bypass turbojet engines have a lower noise level than the turbojet and turboprop engines.

We may note the following basic directions of improvement of aircraft power plants with gasturbine engines:

- improvement of the operation process parameters of the gas turbine engine and structural design solutions that ensure the implementation of these parameters;
- improvement of parameters and characteristics of gas turbine engine components due to the realization of the flow calculating method;
- improvement of the combustion chambers of gas turbine engines by enhancing combustion efficiency in a wide range of operating conditions (use of the catalyst, two-band, vortex combustion chambers);
- usage of engines with heat recovery and variable cycle parameters,
- usage of fans with rotary blades in gas turbines with rotating nozzle device;
- integration of parameters and characteristics of the aircraft and the engine.

Raising the bypass ratio, at constant values of operation parameters of the process, increases the value of thrust and specific fuel consumption is reduced. With the increase in the bypass ratio the air flow through an external contour grows while the energy that is transferred to the contour remains unchanged, which therefore decreases the rate of air flow from the exhaust nozzle. The air flow growth is faster than the expiration of the drop of velocity, and, as a result, thrust defined as the product of the air flow rate increases.

COMPARATIVE ANALYSIS OF JAVA APPLETS AND SERVLETS

Java applets are programs designed to be run inside a Java browser. They are downloaded from a web server and run on the web client. Applets are often used to create rich graphics interactive user interface which can not be made by means of a conventional markup language. Applets are also applied to create online games that allow players to compete with live opponents in real time. Java applet, like a program in JavaScript, must be run from a hypertext document HTML. This property of applets stands for the origin of the term "executable content".

Since applets are downloaded from the external network resources, a method called "sandbox" is used to protect customer data against possible threats. Applets are not allowed to read and write files on the client file system, as well as to open network connections, except for the connection to the host from which the applet was downloaded. Applets are also not allowed to run other programs on the client and load the libraries.

Servlets are Java programs, working on web servers or application servers using Java, as compared to applets designed to work inside the browser that supports Java. Servlets can deliver web services directly to the browser, or act as middleware, which connects the browser to back-end services.

The operation of a server is based on a request coming from the client, which contains URL and parameters. The server contains a special configuration file, informing which servlet should be performed in case of joining to a certain URL. The servlet runs and creates an HTML-page that is sent to the client. The server is essentially a container that loads the servlets, executes them, calling certain methods; after receiving the result, it sends it to the client.

As servlets do not work for the client, they cannot be used to create a more colorful user interface as applets, but they are not restricted by a "sandbox" and can use outside data processing services. Also an applet downloaded onto the user's computer, can be run on incompatible virtual Java machine and will not work correctly. A servlet is run on the server and independent of the client browser.

Though applets once were very popular, servlets are currently more common. This is because of the "sandbox" that does not allow Java applets to use local and remote service. The other reasons are the lack of a single standard virtual machine for popular browsers and the lack of suitable visual development environment to create them. However, one can not deny the benefits of applets in developing the graphical interface of web applications, which are of great demand nowadays.

Based on current statistical reports servlets are used by about top popular 900 sites, by 150 more than last year. The technology is mostly used on websites devoted to business. Only about 360 sites are using applets, although a year ago applets were used by 1,200 sites. Though most of these sites are devoted to business, the most popular ones which use applets are blogs.

EFFECTIVENESS OF DIFFERENT FORMS OF CAPITAL FORMATION

Capital formation occupies an important place in ensuring uninterrupted operation of enterprise. Lack of own resources and the complexity in attracting external funding deprive business unit of its competitiveness both in the home market and in the world market.

The success of any business entity, regardless of ownership and type of activity, largely depends on the correct choice of sources of formation, distribution and use of areas of the capital that is held by the company.

The financial basis of the enterprise is its own capital. However, effective financial activity of the enterprise is impossible without borrowing money. Due to this it becomes possible to expand significantly the scope of business activity, to ensure more efficient use of own capital to accelerate the formation of different target funds and increase the market value of the company. Thus, the use of combined funding sources increases the efficiency of the company.

The problem of the choice of the optimal structure of capital formation of enterprises becomes significant nowadays. The structure of the capital formation depends on many factors. These factors include the following:

- the level of income tax;
- the growth rate of sale of products and their stability;
- the structure of assets;
- the conditions of the capital markets;
- the interest rate for borrowing of commercial banks;
- the level of financial management of enterprise and so on.

The most acceptable for the company is a combined approach to the choice of funding sources. The main sources of financial provision of enterprise are self-financing, government support and borrowing money from financial and credit institutions or commercial banks.

In a market economy, the primary role in accumulation financial resources for production, operation, investment, business activity of company belongs to self-financing. It is based on using funds generated from own sources. Until nowadays there is no certain definition about the essence of this concept. Most authors hold the idea that own resources, first of all, proceed from the sale of goods and services, income and depreciation. Some of the researchers consider that own sources include share capital and the refunds paid by insurance companies as compensation for losses caused by natural disasters, accidents etc.

On the basis of summarizing the positions of different authors own sources of funds are characterized by the following features: permanent nature of existence and use; the order of their use according to regulatory acts, internal documents and local regulations; no fixed fee for their use.

The main advantages of self-financing include the following:

- borrowed funds do not need to return and pay a fee for their use;
- absence of spending for accumulation of funds;
- no need in credit support;

– increased financial independence and solvency of the company.

However, any company in its proper functioning needs periodic use of borrowed funds, which accelerates cash and material resources, ensuring higher financial strength of the company and higher profitability growth opportunities.

It is important to realise that funding through own capital does not lead to rise in obligations while financing through loan capital forms the financial liabilities of the company. Company managers should also bear in mind that for all external financial resources the company should pay interest. Therefore, these resources are the subject of special attention of managers of the company.

For businesses that are unable to raise funds from external financial sources (because of low creditworthiness or attractiveness of investment), internal funding is the only way to attract financial resources.

In practice, the efficiency of borrowed resources are higher than own resources, but its use is associated with greater financial risk and reducing the financial stability of the company. Therefore, it is important to choose the optimal structure of financing sources of the company.

Thus, in order to ensure effective financial capital formation, enterprises of all forms of ownership should use not only their own financial resources, but also attracted resources from a financial market. The most favourable for enterprise efficiency is a combined approach to the choice of funding sources. However, the government should create favourable conditions and regulatory framework to making financial resources available to enterprises of all forms of ownership and economic sectors.

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INTERACTIVITY AS ADDITIONAL TOOL IN ONLINE EDUCATION

Education is constantly changing throughout the years. Students have less desire to sit at a desk and take notes on a lecture. Lessons becomes much more engaging and interactive. Interactive learning is a hands-on, a real-world approach to education.

Web-based learning can be a flexible and a cost-effective alternative way to classroom learning, but it can also be a huge waste of time and money if it is not implemented correctly. One of the biggest issues for universities setting online learning is interactivity, both in its level and process. How can the instructor make online teaching more interactive? How can the instructor create a virtual classroom environment that maximizes participation?

A pretty number of world's top universities offer online multimedia learning features such as chat rooms, collaborative projects, and web conferencing. These multimedia components may help online students master effectively a selected subject. However multimedia learning also has a disadvantage as experienced students can easily become distracted with the educational platform instead of the subject. For many human reasons chatting on forum, boards or tuning out a podcast lecture can result time wasting for busy people. What advantages can be provided by multimedia learning opportunities?

As the face-to-face alternative of discussion, chat rooms are useful place to listen to different perspective views, share actual knowledge, and receive answers to many ques-

tions. New web applications make it easy for multiple students to work together on an online project such as an essay or an assignment. Podcast lectures let you listen to the professor at any time and any location. You need not worry about missing an important detail because you can download podcast on your computer or smartphone and listen to them as many times as you want. Watching a video lecture makes it possible to see and hear your professor, as though you were attending a real lecture. In contradistinction to podcasts, video lectures allow students to view demonstrations and focus on visual cues. For better perception, subtitles are present on several common languages.

Khan Academy, Coursera, TedX are the most popular online education platforms with high level interactivity. For example, Khan Academy offers practice exercises, instructional videos, and a personalized learning dashboard that empowers learners to study at home, university or workplace. Moreover, this educational platform has also collaborated with institutions like NASA, The Museum of Modern Art, The California Academy of Sciences, and MIT to offer specialized content.

Online education provides many additional benefits, taking into account not only convenience and financial savings. An independent approach to distance learning teaches a student to be a more effective time manager. Due to e-learning, a student may develop technical or soft skills needed in their future careers. Knowledge of the Internet opportunities, typing and software programs are necessary for anybody to be considered digitally educated, and online learning make these skills stronger.

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WAVELET TRANSFORMATION

Some ideas of wavelet theory appeared a long time ago. For example, already in 1910 A. Haar published a complete orthonormal system of basis functions with the local domain now called the Haar wavelets. The first reference to wavelets appeared in the literature on digital processing and analysis of seismic signals in writings of A. Grossman and Zh. Morle).

In recent years, the whole scientific direction connected with the wavelet analysis theory and wavelet transform emerged and formed. Wavelets are widely used for filtering and pre-processing of data, analysis and forecasting of the situation on the stock markets, recognition of images, while processing and synthesis of a variety of signals, such as speech, healthcare, for the solution of the compression tasks and image processing in the training of neural networks and in many other cases.

Currently, the wavelet transform is widely applied in encryption and processing of signals and various images, due to its flexibility in the choice of basis function.

Also in contrast to the traditional Fourier transform, wavelet transform provides a two-dimensional representation of the test signal in the frequency domain in the frequency-plane position. The analog frequency in this case is the scope of the argument basis function (most of all - time), and is characterized by its position shift. This allows you to share large and small signal parts, simultaneously locating them on the timeline. In other words, wavelet analysis can be described as a localized or spectral analysis - spectral analysis of local perturbations.

The instrumental analogue of one of the types of wavelet analysis is multi-channel bandpass filtering of the signal at a constant ratio of the width of the filter's bandwidth to the center frequency.

The wavelet transform provides a wide range of orthogonal wavelet functions Ψ , but the display is determined by the result of their properties. Depending on the task there are various methods of forming the criteria for the selection of wavelet function Ψ . Solving the problem of the approximation of functions in the basis of orthogonal functions as the main logical criteria to determine: 1. minimizing the number of approximating terms; 2. minimization of approximation error.

When determining "mother" wavelet such characteristics as smoothness, medium size, the number of zero moments are taken into consideration.

Depending on the task proposed criteria for selecting a wavelet basis permit to choose easily the desired wavelet function thereby accelerate signal processing.

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THE VIRAL MARKETING

Nowadays more and more organizations are aware of their direct dependence on society and importance of building friendly relationships with public representatives. It is the matter of common knowledge that the main key to succeed for any company is advertising. No doubts that the efficiency of advertising depends on its type and methods of distribution. If a product promotion is held in the wrong place and time, the main goals will not be achieved. Due to the Internet new scope for actions and fulfillment of the most incredible ideas has opened.

There are some ways of advertisement distribution, such as: straight, chain and exponential. Unfortunately, when information is transferred from one person to another, this sequence can easily be torn. That is why marketers are forced to look for new ways of interaction with the customers. Perhaps, nothing can be more efficient than delivering your messages through a viral marketing campaign. In 1996, Jeffrey Reypert introduced and extended this term – a method of disseminating information, the main feature of which is the way of dissemination. The storage media roll plays specifically interested consumer. The main idea behind viral marketing is to inspire people to spread your message for you.

Now viral marketing effectively caught in the world of the Internet, where the rate of spread is quite rapid. It gives good results in these channels of communication: blogs, forums, social networks, community, information portals, photo / video hosting.

Interactive communication with people at a distance zone will expand the spread of "virus". The terms of communication does not end with friends, family and colleagues, and goes beyond the city, region, countries and even continents.

It goes without saying that this method of marketing like any others has both its advantages and disadvantages and it's a generally known fact that every medal has two sides. Let's get a closer look on them.

Speaking about advantages we can make list the following:

- Economy. They pay for the idea of advertising and distribution only entirely born by consumers.
 - Advertising is not imposed and served easily. Providing information is mild. Link to product can be placed in the video, cartoon, movie or picture.
 - Clear community feedback. Form a general idea about the product or service that is easy to learn and, if necessary, adjust.
 - The lack of censorship. If the implementation goes beyond legislation, viral advertising provides limitless possibilities.
 - Accessibility. Internet users at any time can learn more about the product, ask questions and receive answers, and understand the opinions of other consumers.
 - The life cycle of this type of advertising more is than two years. This is a fairly long period of time when the brand is on favorable terms in the market.
- It is well-known that nothing is perfect, and, hence, viral marketing has some drawbacks, which is not much. Disadvantages of viral advertising are next:
- The difficulty of forecasting results. If a campaign is brilliantly composed and perfectly embodied in life, unexpected global events can affect the emotional state of total population (the crisis, revolution, natural disasters, etc.). And then all efforts will be futile.
 - Fluctuation of viral marketing. There are both slumps and peaks of recognition and popularity. Because of this, do not forget to feed the interest of new solutions, improvements, taking into account the wishes of customers who will always be grateful.
- Despite some drawbacks, viral advertising is widely used by many companies.

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COMPARATIVE ANALYSIS OF OPENGL AND DIRECT3D

Direct3D is a proprietary development of Microsoft, designed specifically for Windows. It is also used on Microsoft Xbox. It is not available on other platforms (except for API emulation provided by Wine and virtualization).

OpenGL is an open standard developed by a non-profit community-sponsored organization Khronos. All major GPU manufacturers (nVidia, AMD, Intel) somehow influenced OpenGL. Unlike Direct3D, it is available on a very large number of platforms. In particular, OpenGL API is a key item for interaction with GPU in Linux and Mac OS.

Direct3D is based on COM technology. In fact, COM is a standard binary component representation. It is known that classes in pure C++ can not be used in other programming languages, as they are not a standardized binary representation. In particular, each compiler uses its own method for decorating names. COM also allows you to work with object-oriented concepts of any language that supports it. COM is also Windows-specific technology (it uses Windows-specific things like registry).

The annex to the Direct3D uses pointers to objects interfaces. Operation with an object is carried out by calling its interface methods. For example, device-a interface (device in Direct3D is the execution context for a particular window), is named (for example Direct3D 9) IDirect3DDevice9, the texture object is named IDirect3DTexture9,

etc. Creating objects occurs as calling methods of IDirect3DDevice9 interface, for example, it will be IDirect3DDevice9::CreateTexture for texture. A significant number of changes have taken place in Direct3D 10. Direct3D 10 is not backward compatible with Direct3D 9. OpenGL uses the standard functions of C using a standardized ABI, which means that OpenGL can use any language that supports calling native libraries functions (i.e. from any language). OpenGL uses the so-called state machine (finite state machine). The result of the call OpenGL functions depends on the internal state, and can change it. In the OpenGL, to gain access to a particular object e.g. texture, you must first select it as the current function glBindTexture, then you can affect the object, for example, specifying the content texture is accomplished by the call glTexImage2D.

Context is the analog of device-a concept in Direct3D. OpenGL context is tied to a particular window, as well as the device in Direct3D.

Both API provide operations only with graphics. Namely, there is no function to create a window or to operate with keyboard / mouse input or to work with sound (it does not concern DirectX elements, such as DirectInput and DirectSound), which means they are not high-level libraries.

To simplify we can state that OpenGL and Direct3D allow you to draw objects using texture, lighting, transformation, etc. They differ in extension. Direct3D is essentially limited by its major version. Any changes / add-ins occur only when a new version is released. In OpenGL the affordable API is determined by the GPU manufacturer. OpenGL implementation allows you to define extensions to the main specification. The application can obtain a list of supported extensions at runtime and check the availability of those it wishes to use.

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ARTIFICIAL INTELLIGENCE IN THE FUTURE OF AVIATION

If we look at the results of the progress which the aircraft reached in one century, it will be difficult for us to imagine what can we see tomorrow.

The desire to fly has appeared in human minds a long-ago, but it took time for realization. At the end of the XVIII century the first balloons were raised to the sky. In the middle of the XIXth the world saw the airships and the first flight of the aircraft in 1903.

So, today, for instance, among fighters, "Su-35" has better technical characteristics. It is equipped with engines with thrust vector control and has optimum aerodynamic layout. However, this figure is not the main thing that is required for the future aircrafts. Nowadays manufacturers switch their attention over to intelligent "stuffing."

There are a lot of options of aircraft applications, which have their own specific requirements.

The latest models of aircrafts have a strong enough computing power. For example, a modern long-distance aircraft carries out the flights almost automatically. Now, the main human task is to be overseer and "insurance" in case of system failure. The airplanes have started to think. Autopilot is one of the most important step in this field.

A lot of today's military planes already can work in three operation modes, such as independent, semi-independent and adjustable. The first mode gives a chance to strike

explored stationary ground targets. The semi-independent allows to correct both trajectory and flight mission. This also includes refueling. The adjustable includes flight control, an indication of the purpose and the command to use weapons.

Artificial Intelligence is not a fiction, but it is a complicated idea for realization. The British company Vision Systems International and Helmet Integrated Systems Limited are developing the special helmet for pilots of fighters.

This helmet allows pilots of the future generations fighters to "see through the cockpit". The equipment is designed for F-35 and is currently being tested by the research department of the UK Ministry of Defence in Wiltshire.

Instead of the usual display on the dashboard, computer synthesized image will be fed directly to the pilot's visors, providing him with necessary information for flight, navigation and combat.

The new technology is the implementation of the vision capabilities in the infrared range, i.e. the pilot can get the possibility to see at night time. The helmet allows to automatically switch between the modes.

In fact, the plane will be "transparent" for the pilot. Also, the helmet is a kind of command center. What is not less important, it allows to get precision targeting all on-board weapons tied to the movement of the head and the eyes of the pilot.

Shevchenko German

Scientific supervisor – Anpilogova T.V., senior lecturer

INVESTMENT ACTIVITY AND INCREASING COMPETITIVENESS

In broad terms, investment activity is a set of activities for the investment of cash and other valuables in the projects, as well as ensuring the return of investment. In the narrow sense of the investment activity it is the purchase or sale of non-current assets and other investment objects that are not in cash equivalents. Investment activity is one of the most important aspect of the functioning of any business organization. Reasons of investment is to update the existing material and technical base, increasing production, the development of new activities.

Risk factor is essential in investing activities. Investing is always associated with the immobilization of financial resources and usually carried out under conditions of uncertainty, the degree of which may vary considerably.

From the point of structural analysis, the investment can be considered as: subjects, objects, and actual economic relations.

Participants of the investment activity are investors, customers and users of investment activity. They may be business entities, bank and non-bank financial institutions, intermediaries, investment exchange, the citizens, foreign legal entities and individuals, states and international organizations.

The main subjects of investment activity are investors (investors, customers, clients projects, lenders and other members of investment activity), users of investment objects (legal, individuals, state and municipal governments, foreign governments, international associations and organizations, which are objects of investment activities) and other persons.

The objects of investment activity are: real estate, including the enterprise's assets; securities; intellectual property. The structure of the investment market is formed of

relatively independent markets: 1) market objects of real investment: real estate market; market direct capital investments; the labor market; 2) market objects of financial investment: money market (deposits, loans and credits, currency values); stock market (stocks, government bonds, options and futures); 3) market objects of innovative investments: the market of smart investment (licenses, know-how, patents); market research and technical innovation (scientific and technical projects; innovation, new technologies).

Competitiveness of the enterprise is an advantage of the enterprise in relation to other companies in the same industry domestically and abroad. Evaluation of competitiveness of the enterprise is required for: development of activities to its increase; determining counterparties for joint activities; programming output on a new markets; investment activities.

There are certain methods of evaluation:

1. Matrix methods. This approach is based on the assessment of business marketing producer and its product. The essence of the method - the analysis of competitiveness of the enterprise, taking into account the product life cycle.

2. Methods based on the evaluation of the competitiveness of products. This group of methods is based on the fact that the competitiveness of the product and the company are directly proportional. To determine the competitiveness of a product used their qualitative and marketing techniques, most of which is to find value for money.

3. Methods based on the theory of effective competition. The meaning of this approach is the point evaluation capabilities of the enterprise to ensure competitiveness. During the analysis of its possibilities to achieve competitive advantage, estimated by experts from the perspective of existing resources and factors.

Shturmarevych Olga

Scientific supervisor – Maksymovych G.O., senior lecturer

AUTOMATIC LANDING

Automation plane landing is the partial or complete transfer of crew functions at different stages of landing (landing approach, the actual landing) aircraft automatic control system (autopilot). The accuracy of the automatic approach is provided by the interaction of the on-board radio engineering and navigation equipment with ground-based radar facilities. The degree of automation of landing depends on the weather minimum characterizing weather conditions (the height of cloud base, visibility on the runway, etc.) during the approach to landing or during an airplane landing, as well as the categories of weather minimum for aircraft, airport and aircraft commander. International Civil Aviation Organization (ICAO) is set at a minimum of 3 categories of weather for aircraft, airports and aircraft commanders. At the same time, if they are different categories of weather minimum, automated aircraft landing spend category with a lower minimum. When plane landing is automated on the I and II categories of weather minimum glide path automatic piloting of aircraft is carried out to a certain height, then control is passed to pilots. The category III allows you to land in an automatic mode. Landing Automation provides increased flight safety due to reduce the influence of "human factor". It is also cost effective, as the bad weather (under appropriate weather minima) enables the aircraft to land at the airport of destination, and not to leave the alternate. Onboard devices for automation landing include radio goniometric system (localizer and

glide path receivers), altimeter low altitude and other equipment. Airfield equipment, allowing automated aircraft landing, consists of coursework and glide paths, lighting systems and other. Designed microwave landing system automation, in which the trajectory of the aircraft is monitored radio navigation and radar fields, organized in the space above the airport with the help of radio equipment Airport. This fully automatic landing was made by domestic manned orbital ship "Buran" in 1988. Another aircraft landing automation system, for example, using navigation satellites are also practiced.

Automatic landing for civil aviation. The earliest experimental controlled autopilot landing in commercial service was not actually complete cars touchdowns, but was called "autoflash." In this method, the pilot managed to roll and yaw axes manually while the autopilot managed "flash" or feed. They were often made in passenger service as a part of the development program. At Trident autopilot switches were individual commitments for the longitudinal and transverse components of the roll. The pilot has acquired full visual link usually much greater than the height of the solution, manually controlling the long-term control autopilot vertical flight path - ready to fully disengage it at the first sign of any deviation. While it sounds as if it could add an element of risk, in practice, it is, of course, does not differ in principle from the educational pilot that controls the processing of the trainee during the online qualification or training.

Shylnyk Victoriya

Scientific supervisor – Akmalidnova O.M., professor

REGULATIONS FOR DANGEROUS GOODS TRANSPORTATION

As dangerous goods, i.e. materials or substances which may constitute risk to health, property, safety, infrastructure or the environment, to reduce the hazards, connected with their transportation by air, it is necessary to apply safety measures during their handling, usage, storage and disposal.

The transportation of hazardous cargoes is under control of a variety of different regulatory documents, operating at the international and national levels. The United Nations Recommendations on the Transport of Dangerous Goods, ICAO's Technical Instructions, IATA's Dangerous Goods Regulations are the most prominent in the world. These regulations provide safety of handling, packaging, labelling and transportation of dangerous goods.

The ICAO has classified dangerous goods in nine classes. They are:

- 1) Explosives
- 2) Gases
- 3) Flammable Liquids
- 4) Flammable Solids
- 5) Oxidizing Substances
- 6) Toxic & Infectious Substances
- 7) Radioactive Material
- 8) Corrosives
- 9) Miscellaneous Dangerous Good

Air transportation of hazardous cargoes are liable to mandatory and detailed requirements. A lot of goods can be transported on both passenger airliners and airfreight-

ers, though certain freight can be transported only by cargo aircraft. Some types of dangerous cargos can be transported by air, by way of an exception, with a special permission granted to any specified type of cargo/container and in case of particular circumstances. There are some kinds of unpermissible dangerous cargoes.

It is essential that hazardous cargoes be transported in specialized boxes and drums for their preflight packaging that should be correctly prepared before flight to ensure safe transportation, and one more thing to note: they are limited by the maximum allowable quantity aboard an aircraft.

Being transported by air, dangerous cargoes should be certified (e.g. by Shipper's Declaration). Every dangerous goods should have a certain identification document dealing with such items as: the proper shipping name, the UN number, the class or division, the packing group, the packing instruction number, the type of packaging and the number of packages, the net quantity and any subsidiary risk(s), whether it is for carriage by a passenger airliner or airfreighter only.

Dangerous goods regulations serve for protecting the public in the event of an air incident, as well as in some cases to prevent even accidents themselves. These regulations are very important for aviation safety and air transport market growing day to day. Complex situations arising from dangerous goods transportation usually happen due to non-compliance with the regulation requirements – e.g. in case they are wrongly packed or mishandled. In the event of a threat, improperly packed dangerous goods could cause an emergency situation which can even result in air crash.

Sotnikova Daryna

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DANGEROUS GOODS TRANSPORTATION IN AVIATION

Aviation logistics employees involved in the air transportation of hazardous goods must recognize and identify a wide variety of substances or materials that can burn, explode, react violently, cause injury or harm to the people or the environment when transported.

Depending on their properties such ***dangerous goods*** (DG) are divided into 9 classes, which may be subdivided further into classes and groups.

The items of major nine classes of dangerous goods at transportation by air must be labeled according to the internationally adopted system with the class group numbers standing in lower corner of diamond-looking label.

CLASS 1 – "Explosives". They are pyrotechnic substances, preparations and articles. Examples of such substances are gunpowder, rocket propellants consisting of ammonium perchlorate, powdered metals, typically aluminum (Al), and various catalysts.

CLASS 2 – "Gases" are: compressed; liquefied; a refrigerated liquefied; articles saturated with gases and aerosols, but not the carbonated drinks.

CLASS 3 – "**Flammable liquids**" are liquids or mixtures of liquids containing solids or suspensions which evolve vapors, flammable in a closed container at a temperature not exceed 60.5 C°. Such are gasoline, some paints and lighter fluids. The vapors of flammable liquid present serious danger as can easily be ignited and exploded in a cabin.

CLASS 4 – "**Flammable solids**" include substances can light up or be ignited spontaneously or emitting flammable gases at wetting. These are; 4.1. - flammable solids, such as matches; 4.2. - spontaneously combustible, such as phosphorus; 4.3. - dangerous when moistened, such as metallic sodium.

CLASS 5 – "**Oxidizing substances and organic peroxides**". Those items can support combustion by oxygen evolution. An example of a very dangerous DG is methyl ethyl ketone peroxide (MEKP). Extremely dangerous is ammonium nitrate, belonging to class 5.1. In 1947 it detonated aboard a ship in Texas City port, killing 600 people.

CLASS 6 – "**Toxic and infectious substances**" include gaseous, liquid or solid substances that pose a risk of poisoning, chemical burns, disease, death of animals and plants, and substances containing viable micro-organisms. Genetically modified micro-organisms which do not fall under the definition of an infectious substance, relate to grade 9.

CLASS 7 – "**Radioactive Materials**" are gaseous, liquid or solid substances or articles, the specific activity of more than 70 kBc /kg.

CLASS 8 "**Corrosive**" include gaseous, liquid or solid products that may cause visible skin or any living tissue damage, or cause damage to other goods and aircraft design.

CLASS 9 – "**Other DG**"- those are gaseous, liquid or solid substances or articles presenting during air transport a hazard, and which cannot be attributed to other classes of DG. Important nowadays representatives of miscellaneous DG class are lithium metal batteries, both inside a piece of equipment, or packed separately, or with an item of equipment.

At air freight the shipper must document a DG, using the "*Shipper's Declaration for Dangerous Goods*". Requirements, relating to DG commodities are contained in the "*IATA Dangerous Goods Regulations*".

Obviously, the hazards of dangerous goods at air transportation are substantially growing, taking into consideration the risk of technogenic global terrorist activity.

THE PROCESS OF CREATING VIDEO TUTORIALS WITH TIPS AND TRICKS

Video tutorials are very popular nowadays, because they make learning much easier than printed material or online help pages. A tutorial is a method of transferring knowledge and may be used partly in a learning process. Being more interactive than a book or a lecture, a video tutorial seeks to teach by giving examples and supplying the information to complete some tasks.

Tutorials usually have such characteristics as:

- A presentation of the view usually explaining and showing the user interface.
- A demonstration of a process, using some examples to display how a process or a workflow is completed.
- A transition to additional units or sections that builds on the instructions that have already been provided.

If you do something professionally and have a desire to help other people to improve their skills, you can create your own video tutorial and share it via the Internet. Creating video tutorials is not a trivial task. You can create it using various methods. There are no official steps how to make videos, because of the fact that audience and situations vary so widely. In general, there are the following steps that must be done:

1. Prepare to record. First – is a video outline. Using bullets points and numbers you have to prepare the outline for the tutorial. Read it through many times and organize the text to suit the flow of the information you try to deliver. Second – is a presentation. If you wish, you can make your tutorial more appealing using callouts, some flash effects, or with slides which are made using PowerPoint. Third – is a recording software. The best software for its purposes is Camtasia Studio, which has a lot of useful and necessary functions and special effects.

2. Recording. First – is a separation of your recordings. You should know how it's important to record it and audio instructions into 2 separate files. You can start with recording a video tutorial, then record your audio instructions. This will help you to minimize your mistakes and reduce editing time. Second – is a recording video. Focus on each step, try not to make an error and don't perform any unwanted actions. Third – is a recording voice. It's better to write a video transcript before a voice recording. Clear and natural voice is the most important factor for recording your tutorials.

3. Editing the recorded file. Remove all extra frames and make the video play much quicker during loading or installs, while typing the text or looking for something, a common and simply stuff that people already know how to do. Add a broaden frame to paste a callout to ensure that all activities in the video stop when the callout shows up. The best software for editing such video is Sony Vegas, because you can create any effect that you want and allow it to operate on almost any standard computers with Windows OS across a wide range of hardware.

Finally, a video tutorial is produced with only a computer and some software. To publish your video tutorial, burn your video file to a DVD or a CD or upload it to a location where viewers can easily access the content.

POINT OF VIEW IN OSCAR WILDE'S *AN IDEAL HUSBAND*

Assuredly, one of the most important components of understanding the nature of the character and the author's attitude to it is their point of view. Decoding author's and character's viewpoint simplifies the reader's perception of the character and facilitates the reader's comprehension of the character's features, its individuality and singularity.

McIntyre defines point of view as the perspective of considering things, which shows reader the opinion, evaluation or feelings of the individuals involved in a situation. Therewith, there are different types of point of view in stylistics. The first type implies visual perspective or angle of vision from which a scene is presented, the second one means ideological framework and presupposition of the text including male or female perspective and the last one signifies different types of relation of the narrator to the story.

Point of view is a multi-level linguistic and poetic structure, which is conditioned both by its content characteristics and different methods of its linguistic implementation. It includes various planes that in their unity or separately build an integrated picture of character's or author's viewpoint. These planes are temporal, spatial, psychological, ideological and phraseological. The listed above planes are realized in the narration with the help of language and lingua-stylistic means.

Initially, the study of point of view was conducted on the materials of prose fiction. According to Lubbock the first studies of viewpoint included description and analysis criteria such as presence or absence of the narrator in the text of the narration, in other words first-person narration – narrator acting as observer or a direct participant in action, or third person narration – narrator is not a character of the story and tells the story being not involved into the action. Also these criteria include observation of the object of the point of view outwardly or inwardly, it implies that the narrator characterizes the personage subjectively or objectively. And the last point is the criterion of permanence and changeability of one's point of view throughout the entire narration.

Since dramatic texts present complex discourse structure, it is relevant to explore the point of view in plays. The distinctive feature of point of view in plays lies in its realization in the text. Namely, it can be implemented only through the author's remarks and dialogues.

In O. Wilde's *An Ideal Husband*, both the author's and the character's point of view on Mrs. Cheveley, one of the lead characters, could be deduced from the text. O. Wilde remarks that "she is in heliotrope, with diamonds." The author uses the metonymy to stress the craftiness and cunning of the character because noxious tropical plants are known to have the colour of heliotrope. Alternatively, the character's point of view is presented through Lord Goring's assessment of Mrs. Cheveley as "...a genius in the daytime and a beauty at night...". Thus, in form of antithesis, Lord Goring highlights undeniable duplicity of Mrs. Cheveley and specifies her unnatural bifurcation that is very useful for her in terms of getting success and popularity in society.

By way of conclusion, we thus find it relevant to analyze point of view in drama, which can cast light on characters depiction.

METHODS OF INCREASING FLIGHT PROFITABILITY

Being able to operate efficiently is critical to the future of the aviation industry, not just for environmental reasons but also for financial ones. Flight profitability can be simply considered as the difference between the money that is spent on flights by air companies or airports and the money that is earned from the flights.

Modern Ukrainian aviation suffers from market oscillations more than any other country. Any growth or fall in GDP leads to a 4 times bigger growth or fall in the amount of transportations. Foreign currency plays an important role as well since it is directly related to the consumption clauses. It primarily affects the price of fuel, which has been the greatest expenditure for our domestic airlines. It even overcomes the costs for keeping and servicing the aircraft. All of this leads to a significant rise in price of the tickets, and as a result makes flying for Ukrainians too expensive.

This situation has been a major problem for Ukrainian aviation and Ukraine itself, and here we can list several methods of bringing this situation back to normal, or at least, making it stable:

1. Making airports automatized.
2. Searching for other sources of income.
3. Using more efficient aircraft.

Airport is a place that is common for millions of people using services of air traveling or air cargo delivery. This place is not mistakenly called a hub - a place, where lots of important processes meet. These processes make the work of such giants as Heathrow in London or Jefferson-Kennedy airport in NY possible. A great amount of information flow is directed outside the airports (systems of booking and buying tickets, airlines). That is why it is important for the IT structure to integrate with global distribution services, systems of serving passengers and their luggage, etc. We should stick with suppliers of such specific services. Among them are a Spanish company Amadeus and Swiss company SITA, which both provide solutions of IT problems such as tourism and air transportation.

As for the second suggested method, Ukrainian airports should follow the example of their European colleagues. For instance, many western airports receive up to 70% of their profit from non-aviation activity, which allows them to offer discounts to airlines in exchange for a larger passenger flow. Meanwhile Ukrainian airports tend to do their business in a completely opposite way. It reduces their flexibility in the process of attracting low-cost airlines. Ukrainian airports should be more open for offers of advertising, rent, specific services, etc.

It can also be recommended to use more efficient aircraft as they consume less fuel, and less fuel means less money to be spent on transportation. They make possible to reduce the amount of CO₂ emission, which is favorable for nature.

All things considered, it can be stated that the goal of increasing flight profitability is possible and also yet to be accomplished. And this result should be achieved in short terms if we use one of the steps listed above.

METHOD OF NON-DESTRUCTIVE INSPECTION IN AVIATION

Non-destructive inspection systems examine a material to determine damage by using technology that does not negatively affect the structure's future serviceability and efficiency. NDI techniques involve the use of discrete testing devices, for example sensors, that must be in contact with the surface of the unit or system. It helps to reduce the time because of non-neededness of disassembling.

In order to have a result of the high level of quality and reliability, as well as part of the inspection program, as a rule, the following methods NDI are used: Liquid penetrant, Magnetic particle, Visual/Optical inspection, Eddy current, Ultrasonic, Infrared Thermography Radiography (x-ray/gamma ray) Eddy current, Sonic/Resonance, Ultrasonic. Currently, the airport security service includes the passenger and baggage screening, perimeter security, personnel identification and controlled access, for example body scanners, explosive detection system and sometimes using special dogs, like in Varadero airport.

Structural health monitoring involves the use of "smart structures", i.e., the NDI principles in conjunction with the sensors attached the structure of elements. These sensors have a non-destructive tool with greater access to remote areas and can examine complex structures without dismantling. SHM is perceived as a revolutionary approach to the assessment of the integrity of structures, components and assemblies. The meaning of SHM technology is not only the development of self-sufficient systems that use and determine the extent of the damage, but also to monitor the effects of use, wear and corrosion. SHM can provide earlier warning of physical damage. With SHM, you can quickly, systematically and remotely monitor the structural integrity of the aircraft during operation, without disassembling.

Currently, SHM is a timely development, because the costs associated with the increase of service are growing very rapidly, but the maintenance and repair of aircraft currently represent about a quarter of operating costs. Replacing manual checks with some form of automated health monitoring will significantly reduce the costs associated with the life cycle, so the lack of growth and destruction of the structure can be better controlled by on-board systems of the SHM, which continuously evaluate the structural integrity and performance.

SHM sensors should be lightweight, embeddable and easily mountable, low-profile, durable and reliable. To reduce human error factor, the sensors must be easy to control, with minimal need for performing identity analysis of good quality data. By the way, the SHM can control not only the structure but the electronics, avionics, hydraulic and also can be widely used in the automotive, industrial and civil infrastructure facilities.

As a result, we can say that the main idea of the SHM, is to create a system similar to the human nervous system, with a network of sensors located in areas where structural integrity must be maintained. Structural health monitoring systems can be grouped in a similar way to the human nervous system, with sensors that are concentrated in key areas where the load is high.

SAFETY CHALLENGES IN AVIATION

Regulation (EC) of the European Parliament and of the Council established common rules in the European Union, in order to protect civil aviation against acts of unlawful interference. The provisions of Rules are applied to all airports or parts of airports located in an EU country, not used exclusively for military purposes. These provisions are also applied to all operators, including air carriers, providing services at these airports, all entities located inside or outside airport premises providing services to airports. Regulatory standards are implemented by Commission Regulation (EC). The requirement was introduced by Regulation 2002 to provide security inspections for all passenger flights, including domestic flights. Some EU countries had no checks on internal flights until 2005.

Computer security is not a new topic. Department of Transportation in 1987 analyzed the threats specifically addressed computer security risks in aviation. Those threats are perhaps even more intensely than before. Perhaps the most fundamental question today is “How much security is enough?” Computer security can also be referred to as computer safety. Safety and reliability of aviation infrastructure need to be carefully integrated into the entire infrastructure, addressing of computer systems, computer networks, public switched networks, transmission and distribution of power facilities, air traffic control infrastructure and the interactions and interdependencies between them. When analyzing computer security aviation industry is especially important in terms of human life, expensive equipment, cargo and transport infrastructure. People are always a potential source of risk.

Improper computer system operation in a range of aviation industry may cause the loss of confidentiality and system integrity, which can lead to more serious problems, such as data theft or loss, network outages, and air traffic control, which in turn, can lead to the closure of airports, loss of aircraft, loss of passenger lives. Military systems that control munitions can pose an even greater danger.

Airport security refers to the methods and techniques used in the protection of passengers, personnel and airplanes that use the airport from accidental or malicious damage, crime and other threats. A large number of people pass through the airport every day. This represents a potential target for terrorism and other forms of crime because of the number of people in a particular place. Likewise, a high concentration of people in large airliners, the potential high mortality with the attack on the aircraft can provide tempting targets of terrorism or fail them because of various attacks and attempts worldwide in recent years. Airport security is trying to prevent any threats or potentially dangerous situations or entry into the country. Thus, the airport security service serves to protect the country from any dangerous events, to reassure passengers that they are safe and to protect the country and its people. One of the most notable aspects of the safety of the process making sure passengers do not take on board prohibited items. Knowing what is allowed and what is not allowed before arrival will save you time and inconvenience and to make your trip more enjoyable.

SNIFFER BEES IN AIRPORT SECURITY

Police and military forces have used dogs for many years to detect explosives. The scholars from the Defense Advanced Research Laboratory who have been working with honeybees since 1999 state that bees can actually challenge dogs for the sense of smell. In the same way as they seek out pollen for honey, bees can easily detect other tiny particles in the air, including hints of materials used to make bombs.

The mechanism of conditioned stimulus and response was studied during the experiments with Pavlov's dog. After a series of tests the sound of a bell with the smell of food caused the dog to drool when the bell rang. The method of sniffer bees training is based on this principle and is quite simple: a particular stimulus is associated with a reward. The researchers at Los Alamos National Laboratory are conducting the most recent studies with bees. These insects associate the smell of bomb ingredients with sugar water that, in turn, causes the bees to extend their proboscis as if they are about to extract sweet nectar from a flower when they smell explosives.

At the same time, German scientists used another way of training – they prepared honeybees to heroin scent accompanied by small electric shocks, so the insects quickly associated the odor with punishment and showed a learned “avoidance” behavior, fleeing the source of the scent. They suggest the honeybees could one day identify illegal substances in luggage and other contained spaces. Since the honeybees feel smell with their antennae transforming odors into electrical signals, their sensitivity to drugs can be measured by connecting the antenna to electrodes. During the experiments, the bees had the strongest antennal response to heroin and cocaine.

The main problems with the dogs training programs are cost and time. According to the estimates made in 2004, the average successful canine police program cost more than \$55,000. But today, its cost is much higher. Dog training takes several years and after completion of every task they need to rest and cannot concentrate for a long time. Additionally, many existing drug-sniffing dogs have been trained to sniff out marijuana. As marijuana is being gradually legalized, dogs need to get concentrated on illegal drugs. Their retraining is a long and challenging process and freshly trained dogs are in critical shortage.

Keeping that in mind, the perfect alternative for drug-sniffing dogs should have a great stamina, speedy learning skills, and a perfect sense of smell – and honeybees have all three. Compared to dogs the main advantage of training honeybees is shorter training time: one dog training takes approximately 15,768,000 seconds, while a bee needs only 300 seconds. Bees get smell association rapidly after only a few exposures to vaporized explosive ingredients or drugs followed by the sugar water or an electric shock.

You cannot find drug-sniffing bees at border control just yet. Their current application is quite limited as keeping them requires specially-designed containers for 40 honeybees to monitor their behavior and fill scent.

THE BASIC PROCESSES OF THE INTERNATIONAL ECONOMY DEVELOPMENT OF THE XX CENTURY

Analyzing the development of international economy of the XX century we can observe a lot of similarities during the early 1930s and 1970s. The decade of the 1930s was a period with a turning point in the international economy. Humanity opened the door for Keynesian economics and for the idea of social security. It means that government should play a major role in the market managing, in the health care sector, in the unemployment compensation and in the other forms of social assistance. It was a process of departing from the old notions that the market is self-regulating structure and that the government intervention should be minimal.

The results of all these processes were the Great Depression and the New Deal policy, which were obstacles to the economy regulation, financial government operations and the spread of fiscal policy. Moreover, the Great Depression and World War II gave rise to the creation barriers of such international organizations as the World Bank, International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT). The 1960s were a decade of a turning period to the modern arrangements and for the transition from neoclassical economics to Keynesian one.

In international economic relations the term "integration" came up as a result of beginning of the formation of supranational institutions and create economic community to ensure freedom of trade and economic policy coordination in Western Europe. Even in the early stages of integration process research of international economic integration was related to the liberalization of trade and payments.

Analyzing the various theories of development of international economic integration in terms of trade and economic relations, we can come to a unified theory of integration doesn't exist. Every country has to define its course of choosing an international trade and economic integration through the search of specific benefits.

Summarizing the effects of international economic integration we can determine two main forms. On the one hand, the economic integration leads to liberalization of economic relations between the countries that are the part of the integration association. This is achieved through the progressive exclusion of various trade and economic constraints that exist between countries in pre-integration period. On the other hand, as these restrictions are relevant to other countries, that are not part of the integration association, we can decide that regional economic integration can lead to discrimination in trade with these countries.

The internal logic of economic integration mechanism reflects the process of market evolution starting with liquidation of simple shapes of obstacles and barriers to the development of international trade relations, leading to the growth of supranational regulation of economic and social life within the integration.

Considering this we can make conclusion that government should consider development and implementation of foreign policy through the benefits received by the national economy from participation in integration processes and the losses it may incur.

MAIN APPROACHES TO MOTIVATION OF PROJECT TEAMS IN PROJECT MANAGEMENT

System of personnel management of the project will not work effectively if there is no effective model of motivation. Among the factors that motivate people to detect activity during performance of their duties, there is not only material compensation but also a variety of work for content, opportunities for professional growth, sense of satisfaction from the achieved results, increasing responsibility, the possibility of expression initiatives in a favourable microclimate of the team.

The functional hierarchy in a team, differences in titles and symbols of power are the basis for the manager to find such motivation to work, that will be appreciated as desirable.

Motivation has internal and external factors that stimulate desire and energy in people to be continually interested and committed to their job, role or subject, or to make an effort to attain a goal. Modern theories of motivation are based on data from psychological research.

There are several motivational theories, such as Substantial: theory of Abrams Maslow (Maslow's pyramid), theory of D. Mc Clelland (needs of power, success, participation), theory of F. Herzberg (unsatisfactory factors - hygiene, satisfying factors - motivational), theory of the mushroom (kept in the dark and feed twice daily); Procedural: theory of expectations, the theory of fatness, model of Porter-Lawler.

In the project team there is no clear functional hierarchy, because most of the traditional methods of motivation are not effective. In addition, peculiarity of the project activity imposes an imprint on the traditional factors of motivation and complicate their performance. But workers with high level of motivation have significant productivity of their work and get gusto from the work, from group to the goal achievement. There are many factors that can motivate people. The main task of project manager is to understand how to motivate people, determine what is necessary for employees and provide them with these means.

In order to increase motivation of team members and overcome the complexities of the project managers use factors called the five "P"s: purpose; productivity; profit sharing; progression; professional recognition.

Purpose. The employee must have confidence in the importance of the work he performs and understand his role in the organization. This eliminates the disadvantages of influence of factors for motivation in a matrix structure.

Productivity. Since career development is rather complicated, the worker himself wants to manage the development of his career. Delegation of authority depending on the task allows subordinates to feel responsible for their development. An important

factor is providing the employee with the right to select the next project in which he will participate as a reward for achievements in the implementation of the previous project.

Profit sharing. Many organizations give an opportunity for employees to profit sharing, it stimulates better performance of their work.

Progression. When a person reaches the top of the pyramid of Maslow (self-realization), he examines each new project as an opportunity to enrich his knowledge and experience.

Professional recognition. This is an indicator of the achievements of an employee. Since in simple structures top manager has no direct contact with employees, for an employee it is important that the results of his work and professional skills are recognized by top management.

During the implementation of the tasks of project there are situations when workers' interests do not coincide. This can lead to conflicts that are primarily the result of non-compliance of the project structure and division of labour as well as fragmentation of people with different values. So the ability to manage conflicts becomes important.

Yaremchuk Olena

Scientific supervisor – Maksymovych G.O., senior lecturer

ELECTRONICS

Electronics is the study of the flow of electrons and their control in electrical circuits. Radio Engineers Institution has identified electronics as "the art and science that deals with electronic devices and their use." Electronics is in priority in all fields of technology today. Electronics has made tremendous progress over the past few decades, and our everyday life includes the use of electronic devices. Electronics plays an important role in every aspect of our life. The presence of economic and rapid means of communication makes the progress of the country. A few years ago, the main area of electronics has been in the field of telephony and telegraphy. But now, with the help of radio waves any messages can be sent from one place to another without the use of wires. Radio and TV broadcasts both entertainment as well as communication. Currently, electronic devices are widely used for entertainment. Defense sector is completely controlled by electronic circuits. Radio space is the most important event in the field of electronics. Using radar, it is possible to detect and identify the exact location of the enemy planes. Radar and anti-aircraft equipment can be connected by means of an automatic control system.

Electronic circuits are widely used in industrial applications such as monitoring of weight, thickness, and quality of wet material. The electronic circuits of the amplifier is used to increase the signals, and thus to control the operation of power systems, automatic door locks and security devices. Controlled electronic systems are used for welding and heating industry. The most important industrial application is that power which

generates thousands of megawatts of power is controlled by tiny electronic circuits and devices.

Electronic systems are used by scientists and physicians in the diagnosis and therapy of various diseases. X-ray, ECG, short wave diathermy units and oscillographs are some of the tools that were used so far in medical science. The use of electronics in medicine has grown so high and is useful in saving the life of mankind much suffering. Electronics instruments such as cathode-ray oscilloscopes, frequency counters, signal generators, strain gauges are of great help in for precise measurement of various quantities. There is no research laboratory is complete without these electronic instruments. All electronic circuits include several key components. There are two active components and three passive components.

Electronics plays a leading role in the scientific and technological revolution. The introduction of electronic devices in various spheres of human activity largely contributes to the successful development of complex scientific and technical problems, productivity increase of physical and mental labour, improve economic indicators of production. Based on the achievements of the electronics industry, which produces electronic equipment for various kinds of communications, automation, television, radio-location, computer engineering, systems process control, instrumentation, and instrument lighting, infrared technology, X-ray equipment, etc.

Yemelianovych Kseniya

Scientific supervisor – Kozeletska I.S., senior lecturer

NEAR FIELD COMMUNICATION (NFC) TECHNOLOGY INTRODUCTION IN AVIATION INDUSTRY

The aviation industry has demonstrated the fastest growing rate of traffic over the past few decades among the other transportation modes. Therefore, airlines should enhance passenger handling to improve operational efficiency and gain more profit. Introduction of up-to-date technologies is essential for the airlines to strengthen their position in the competitive market.

Near Field Communications (NFC) represents a new step in mobile innovations offering a wide range of new services that can be used in different passenger handling operations at airports. NFC is a wireless communication and data exchange method that uses electromagnetic radio fields in close connection between digital devices such as smart mobile phones and tablets. NFC allows performing transactions in a simple movement with a mobile phone. This includes mobile payments, ticketing, and access control and information exchange. Unlike other technologies, the transaction is performed in a voluntary gesture, in full respect of people's data privacy. The main reasons of adopting the NFC technology in the aviation industry is to make the complicated processes simplified, decrease queues and facilitate the process of passenger handling at airports, which will certainly increase customer satisfaction.

Mobile services and the NFC technology can provide benefits for all air transport stake holders at different stages of passenger handling. Passengers will not have to carry a paper document or to go through the various airport check points as the boarding pass information is stored locally in the mobile NFC phone. The travelers will only have to present their mobile NFC phone in close proximity to the target reader for the boarding pass data to be read. After check-in the passengers will go to a counter and easily identify themselves with their NFC mobile phone (where their boarding pass is stored) and get baggage tags printed. The tagged baggage moves to the processing counter where it is identified by the NFC phone. At the gate, passengers will just have to touch their mobile NFC phone to the boarding gate reader to be granted access to the aircraft.

For airlines, the NFC boarding pass token will simplify passenger security control, keep track of passengers and accelerate decision-making on flights departure and operational management.

The application of NFC technology will bring to airlines the following benefits: ground handling operational cost reduction, revenue increase per passenger, improved service, greater customer satisfaction and loyalty, easier passenger identification at any point, improved processing time and queue reduction. The introduction of Near Field Communication Technology in aviation industry will undoubtedly increase the efficiency of airline operations and consequently increase their profit.

Zhab'ak Sofiya

Scientific supervisor – Tkachenko S.I., senior lecturer

MODELING

Science deals with the study of any nature, able to accept, store, and process information and use it to manage and control. This is extensive use of cybernetics and mathematical method and seeks to obtain certain special results that allow to analyze how this kind of system restore their way of action based on the experience with them and synthesize them (control circuit systems that can perform specified actions). Due to its particular character Cybernetics in no way is not confined to the philosophical discussion of the nature of "expediency" in machines and philosophic analysis of its range of the phenomena investigated.

The main method of cybernetics is modeling. In the way of its implementation modeling can be divided into:

- Modeling feature of a facility, system events, events - in the hope that thus fail to adequately describe the future behavior of the object. For example - role modeling the "seller" and "buyer" in describing the buying process in marketing.
- Modeling characteristic of the object of study - with the hope that this can get adequate description of its function. For example, - modeling human decision followed the use of the results in the description of an "sale process" for each of the parties involved in it. In the simulation functions of a facility we, generally speaking, do not put

forward as a mandatory requirement to ensure that our model "was similar" to the object itself.

This approach is sufficient for us, when the model will predict the performance features only the features of interest to us, given the environment a social or economic system. This, in fact, is the reason due to which various objects (processes, events, etc) are often described by with the same model - including here also mathematical models! Conversely, when we are engaged in modeling a given object being studied - here we need to achieve "similarity" to the model of the object as well. Actually, while we get a model that could well be suitable for many different environment - thus, the scope of such models may be more extensive than we initially expected. What a way of modeling should be selected in each case - it is determined by the investigator. In this important role is belongs to the researcher's knowledge, and his experience, his level of mastering specific apparatus and methodology modeling - and, of course, his knowledge of mathematics.

Zinchenko Oleg

Scientific supervisor – Absalyamova Ya.V., associate professor

LIFE CYCLE OF ORGANIZATION

Companies appear, develop, get successful, decline and, eventually, disappear. Some of them carry out their activity for a long time and are changing during their lifetime. New organizations are formed every day. At the same time, hundreds of organizations are liquidated forever. If they know how to adapt, they thrive, if they are inflexible, they disappear. Some organizations are developing faster than others and do their work better than others. The manager has to know at what development stage the organization is and to evaluate what managerial style is the most suitable for this stage. That is why the "life cycle" term is a widespread meaning of the ability to foresee changes happening to the company with time. There are different particular stages of the company life cycle and transitions from one to another could be anticipated, they are not random. Each of these stages involves a specific algorithm of manager's actions.

The first phase is the phase of the organization creation. It includes such elements, as documentation, creation and production of the first goods. The most creative possibilities and fuzzy goals are the features of this phase. At the stage of organization's formation manager sets such goals, as access to the necessary resources and mastering the competition mechanism. Actions of the manager are the following: to carefully study the consumer's demand for these products or services in competitive markets; to collect and evaluate information on the activities and intentions of competitors; to evaluate the need and feasibility of increasing the capacity of the company.

The second stage is the stage of growth. The organization solves two main tasks: to create conditions for maximum growth and solving the task of the product and service quality maintenance. Actions of the manager here are as following: solving social prob-

lems; ensuring a balance between current and innovation activity; introducing advanced management structure.

The third stage is the stage of maturity. Manager sets the following objectives: to strengthen the strategic capacity; to maintain stable position on the market; to systematically track competitors; to analyse production facilities needed; to define industrial scientific and technological policy of the organization based on consumer demands; to create necessary conditions for maintaining and strengthening the intellectual potential of the organization.

The final, fourth stage is the decline stage. Actions of the manager here are such as: saving all kinds of resources and focusing on the activity of the company, which promises maximum results in the shortest period of time; exploring the possibility of merging with other companies; changing organization of management methods; establishing new contacts with suppliers, finding new markets. Goals of the manager here may be as following: to have a new technology; to suggest constantly improving qualification of employees; to have and to maintain relations with the right people; to have own sources of information among competitors and government agencies; to create associations of insurance with similar organizations; to increase the share of liquid assets in the authorized capital of the organization.