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The theory of scientific management by F. Taylor

The principles of Taylor's scientific management are:

1. Science, not rule of thumb
2. Harmony, not discord
3. Cooperation, not individualism
4. Development of each and every person to his/her greatest efficiency
5. Development of Every Person to his Greatest Efficiency

The techniques of scientific management according to F.W. Taylor:

i. Functional foremanship - A foreman is a person who is in charge of the workers at the operational level. Taylor suggested that in order to increase efficiency in an organisation, performance of a foreman should be improved. Taylor observed and identified few qualities such as intelligence, tactfulness and judgement that a foreman should have. He found that no single person can have all the required qualities. Thus, he suggested that instead of a single person, there should be eight persons to perform the functions of a foreman. This technique is called functional foremanship.

ii. Standardisation of work - Standardisation of work implies setting a milestone or benchmark for any work or activity. It aims at establishing standards of excellence against which actual performance can be measured.

iii. Time study - In this technique, Taylor emphasised setting a standard time limit for completing any particular job. With the help of time-measuring tools, considerable readings can be taken of the time taken to complete a task. On the basis of this, a standard time limit can be set for each task. This helps in deciding the number of workers to be employed for a task, determining their wages, etc.

iv. Motion study - As the name suggests, motion study refers to the study of motion (movements) involved while doing a task. The technique aims at removing unwanted actions/motions so that the work can be completed in a lesser time. According to Taylor, by eliminating the unproductive movements, productivity can be increased.

v. Different piece rate plan - Under this system, workers should be classified as efficient or inefficient on the basis of certain specific standards (related to quality and quantity) and the payment of these workers should then be paid accordingly. For example, the standard output per labour per day is 10 units. Now, it is decided that the workers who make more than or equal to the standard units will get $ 20 per unit and those who make less than the standard units will get $10 per unit. In this way, a difference can be made between efficient and inefficient workers.

vi. Other techniques - Taylor introduced other techniques such as the use of instruction cards, rules and regulations for discipline and use of charts or graphs to instruct the employees. Some techniques also emphasised on building cooperation and mutual trust between the workers and the managers.

The theory of human relations in management by E. Mayo

The basic features of human relations approach have been the result of various experiments conducted by Elton Mayo and his colleagues in twenties and thirties‘ of the last century focusing their attention on the problems of industrial workers. The first major research study which came to be known as —The First Enquiry undertaken by Mayo was in a textile mill in 1923 near Philadelphia. Under the then prevailing circumstances, the mill provided all the facilities to the workers. It was well organized and considered to be a model organization. Despite this, it faced some serious problems in one of the sections--the mule spinning--of the mill. The turnover of the employees in this section was estimated to nearly 250 percent per annum as against 5 to 6 percent in other sections. The management introduced several schemes by way of incentives to retain the workers but of no avail. Finding no way out of this ticklish problem, the matter was referred to Harvard University which in turn entrusted it to Elton Mayo.

Mayo studied the problem from various perspectives i.e. social, physical and psychological and started experiments with the permission of the management. In the very beginning, he studied the problem of physical fatigue. In order to overcome this problem he introduced rest periods of ten minutes each in the morning and afternoon for every worker of the mule section. Finding positive and encouraging results of this exercise, the scheme was extended to all other sections. Consequently, the symptoms of fatigue disappeared and the labor turnover almost came to an end as the workers started taking interest in work. The overall production level increased and the morale of the workers boosted. Further, Mayo suggested certain measures whereby workers had to earn their rest periods and bonus by producing more than a certain percentage. While these privileges made the workers happy but not liked by the supervisors as the same were not available to them. Keeping this fact in mind Mayo introduced a new scheme of shutting down whole of the spinning department for ten minutes, four times a day. This brought a new change in the outlook of supervisors and employees as all of them were satisfied with this new work culture. Besides, he placed the control of rest periods purely in the hands of workers which led to mutual consultations among them giving rise to the process of social interaction. Thus a new awakening began whereby the assumptions of rabble hypothesis‘ which assumes mankind a horde of unorganized individuals actuated by self- interest‘, was questioned and replaced by group interest.

Summary of Mayo's Beliefs: Monetary incentives and good working conditions are less important to the individual than the need to belong to a group. Informal or unofficial groups formed at work have a strong influence on the behavior of those workers in a group.

The theory of classical management by A. Fayol

Henry Fayol’s 14 principles of management look at an organization from a top-down approach to help managers get the best from employees and run the business with ease. Let’s take a look at them and understand them in detail.

1. Division of Work

The first Henry Fayol principle of management is based on the theory that if an employee is given a specific task to do, they will become more efficient and skilled in it. This is opposed to a multi-tasking culture where an employee is given so many tasks to do at once. In order to implement this principle effectively, look at the current skill sets of each employee and assign them a task that they can become proficient at. This will help them to become more productive, skilled, and efficient in the long run.

Example: At a school, every department has a different responsibility, like academics, sports, administration, sanitation, food, beverages, etc. These responsibilities are taken care of by employees specializing in that particular department, increasing efficiency and productivity and making them specialists in their field.

2. Authority

This henry fayol principle of management states that a manager needs to have the necessary authority in order to ensure that his instructions are carried out by the employees. If managers did not have any authority, then they would lack the ability to get any work done. However, this authority should come along with responsibility. According to Henri Fayol, there should be a balance between authority and responsibility. If there is more authority than responsibility, the employees will get frustrated. If there is more responsibility than authority, the manager will feel frustrated.

Example: If an employee has been responsible for managing the decor department while planning an event but has no authority to make design decisions or contact the vendors to get the work done, no efficiency or productivity will be achieved.

3. Discipline

This principle states that discipline is required for any organization to run effectively. In order to have disciplined employees, managers need to build a culture of mutual respect. There should be a set of organizational rules, philosophies, and structures in place that should be met by everyone. Bending rules or slacking should not be allowed in any organization. In order to achieve this, there is a need for good supervision and impartial judgment.

Example: Every employee must follow certain rules and regulations and keep a disciplined attitude in the workplace for smooth working and efficient results.

4. Unity of Command

This principle states that that should be a clear chain of command in the organization. The employees should be clear on whose instructions to follow. According to Fayol, an employee should receive orders from only one manager. If an employee works under two or more managers, then authority, discipline, and stability are threatened. Moreover, this will cause a breakdown in management structure and cause employees to burn out.

Example: If in a company, an employee has been given a task to finish within 3 to 4 hours as ordered by their immediate superior. But the head of the department asks them to deliver the task within 1 hour. In this case, no unity of command can create confusion and pressure in the workplace.

5. Unity of Direction

This henry fayol principle of management states that the work to be done should be organized in such a way that employees work in harmony towards the same objective, using one plan, under the direction of one manager. For example, if you have a range of marketing activities such as advertising, budgeting, sales promotion, etc., there should be one manager using one plan for all the marketing activities. The different activities can be broken down for different sub-managers, but they should all work towards a common goal under the direction of one main person in charge of the whole thing.

Example: Different sets of activities within a department should be managed by different managers to avoid confusion and lesser efficiency within the workflow.

6. Collective Interest Over Individual Interest

This principle states that the overall interest of the team should take precedence over personal ones. The interest of the organization should not be sabotaged by the interest of an individual. If anyone goes rogue, the organization will collapse.

Example: While planning a team outing, the employee making the travel and stay decisions must make arrangements according to comfort and affordability, not just as per their liking.

7. Remuneration

This henry fayol principle of management states that employees should be paid fair wages for the work that they carry out. Any organization that underpays its workers will struggle to motivate and keep quality workers. This remuneration should include both financial and non-financial incentives. Also, there should be a structure in place to reward good performance to motivate employees.

Example: Any organization must be fair regarding their remuneration policies where all the employees must receive a salary worth their efforts irrespective of their gender, tenure, and other factors.

8. Centralization

Centralization refers to the concentration of power in the hands of the authority and following a top-bottom approach to management. In decentralization, this authority is distributed to all levels of management. In a modern context, no organization can be completely centralized or decentralized. Complete centralization means that people at the bottom have no authority over their responsibilities. Similarly, complete decentralization means that there will be no superior authority to control the organization. To use this effectively today, there should be a balance of centralization and decentralization. The degree to which this balance is achieved will differ from organization to organization.

Example: Centralization is mostly common in small and medium-sized firms where the delegation of work is minimal, and the owners make most of the decisions.

9. Scalar Chain

A scalar chain refers to a clear chain of communication between employees and their superiors. Employees should know where they stand in the hierarchy of the organization and who to go to in a chain of command. To implement this in the workplace, Fayol suggests that there should be an organizational chart drawn out for employees to see this structure clearly.

Example: Every organization has a specific chain of authority from the highest level of superiors, like the founder or CEO, to the lowest level of subordinates following a hierarchy for maximum productivity.

10. Order

This principle states that there should be an orderly placement of resources (manpower, money, materials, etc.) in the right place at the right time. This ensures the proper use of resources in a structured fashion. Misplacement of any of these resources will lead to misuse and disorder in the organization.

Example: Employees should be given a designated space and the right tools or equipment to complete their work efficiently.

11. Equity

Equity is a combination of kindness and justice. This principle states that managers should use kindliness and justice towards everyone they manage. This creates loyalty and devotion among the employees towards the organization they work for.

Example: All employees, irrespective of gender, religion, race, and sexuality, must feel safe, seen, and heard and be given equal opportunities to grow and flourish in their careers within the organization.

12. Stability of Tenure of Personnel

This principle states that an organization should work to minimize staff turnover and maximize efficiency. Any new employee cannot be expected to get used to the culture of an organization right away. They need to be given enough time to settle into their jobs to become efficient. Both old and new employees should also be ensured job security because instability can lead to

inefficiency. There should also be a clear and effective method to handle vacancies when they arise because it takes time and expense to train new ones.

Example: Every new employee must be given a proper induction of both the technical aspect of the company as well as the work culture and office environment for them to mingle well. Old employees should be given alum awards for completing certain tenures to boost morale.

13. Initiative

This principle states that all employees should be encouraged to show initiative. When employees have a say as to how best they can do their job, they feel motivated and respected. Organizations should listen to the concerns of their employees and encourage them to develop and carry out plans for improvement.

Example: Taking suggestions from employees regarding their specific department can make them feel seen in an authoritative position and can give them a sense of achieving something for the team.

14. Esprit de Corps

Esprit de Corps means “Team Spirit”. This henry fayol principle of management states that the management should strive to create unity, morale, and co-operation among the employees. Team spirit is a great source of strength in the organization. Happy and motivated employees are more likely to be productive and efficient.

Example: While discussing the new plan of action for achieving the next month's targets, using the word 'We' instead of 'I' brings a teamwork spirit to the group.

The theory of rational management by P. Drucker

By implementing Drucker’s people-centered management theory, business owners and managers can build a sustainable and nourishing work environment that benefits the company’s long-term development, goals and growth.

At the core of Drucker’s management theory lie the concepts of decentralization, knowledge work (in fact, he coined the term “knowledge worker”), management by objectives (MBO), and the SMART goal method.

– Decentralization means that managers should empower employees by delegating tasks.

– MBO involves superiors and their subordinates working together to set common goals, identify employees’ areas of expertise and define measurable expected results.

– The SMART method means that those goals need to be specific, measurable, achievable, relevant, time-specific and recorded.

Prerequisites of corporate management and logistics management

Prerequisites for corporate governance:

1. Presence of a good organizational structure with defined authority and responsibilities. This means that the organization should have a clear hierarchy in place, with each employee knowing who their supervisor is and what their responsibilities are. This helps to ensure that tasks are not duplicated or missed, and that everyone is accountable for their work.
2. Presence of a proper system for guiding, monitoring, reporting and controlling. This means that the organization should have a system in place for setting goals, tracking progress, and measuring results. This helps to ensure that the organization is moving in the right direction and that it is making the best use of its resources.
3. Presence of visionary goals and a mission to grow the organization. This means that the organization should have a clear vision for the future and a plan for how to achieve it. This helps to motivate employees and to give them a sense of purpose.

The origin of the theory of logistics management can be considered the scientific concept of the "value chain" developed by M. Porter, an interconnected flow of various activities from the delivery of results to the consumption of products. According to D. Boddy and S. Peyton, the main form of managing the interaction of subjects in the "value system" is partnership - "business relations based on the efforts of the parties to joint activities in accordance with a common vision

of ways to increase consumer satisfaction at all levels." Ian H. Gordon generally considers "the main asset of entrepreneurship to be partnership relations." The CRM (Customer Relation Management) system and its collaborative subsystems of means of organizing effective interaction using modern communication capabilities such as the integrated corporate structure "Microsoft Business Solution" in combination with the traditional administrative scheme for managing logistics processes in the divisions of each individual sub- logistics chain agent.

Basic principles of logistics management:

1. Customer Focus. Customer focus is the cornerstone of effective logistics management. Understanding the unique needs and expectations of customers enables organizations to tailor their logistics strategies accordingly.
2. Integration. The principle of integration underscores the importance of synchronizing various elements of logistics into a cohesive system.
3. Planning and Forecasting. Planning and forecasting are essential pillars of logistics management that influence the entire supply chain.
4. Resource Allocation. Resource allocation pertains to the efficient deployment of personnel, equipment, and funds across the logistics network.
5. Technology Utilization. In the modern era, technology is a driving force behind logistics management. Organizations leverage technology to gain real-time visibility into their supply chain, enhance decision-making, and improve overall efficiency.
6. Inventory Management. Inventory management involves finding the delicate balance between carrying enough stock to meet demand and minimizing holding costs.
7. Supplier Collaboration. In today's interconnected world, supplier collaboration is a critical principle of logistics management.
8. Risk Management. Logistics operations are susceptible to various risks, ranging from natural disasters to labor strikes and geopolitical tensions.
9. Sustainability. Sustainability is a crucial consideration in modern logistics management. As environmental concerns grow, organizations are under increasing pressure to adopt eco-friendly practices.
10. Continuous Improvement. The principle of continuous improvement, often associated with Lean and Six Sigma methodologies, emphasizes the ongoing assessment and refinement of logistics processes.
11. Performance Metrics. Performance metrics are essential tools for evaluating the effectiveness of logistics operations. By measuring key performance indicators (KPIs), organizations gain insights into their efficiency, accuracy, and overall performance.
12. Flexibility and Adaptability. In the dynamic world of logistics, flexibility and adaptability are paramount. Market conditions, customer demands, and external factors can change rapidly. Organizations that can quickly adjust their strategies and operations to these changes gain a competitive edge.
13. Lean Principles. Lean principles, derived from Lean manufacturing, focus on minimizing waste, improving efficiency, and optimizing resource utilization. These principles align perfectly with the goal of efficient logistics management.
14. Cross-Functional Collaboration. Logistics management is a complex undertaking that involves various departments working in harmony.
15. Training and Development. Investing in the training and development of logistics personnel is an investment in the success of the supply chain.
16. Regulatory Compliance. Navigating the complex landscape of regulations and compliance is crucial in logistics management, particularly for organizations engaged in international trade.
17. Outsourcing and Partnerships. Outsourcing and forming partnerships are strategies that allow organizations to leverage external expertise and resources to enhance logistics operations.

18. Ethical and Social Responsibility. In recent years, ethical considerations and social responsibility have gained prominence in logistics management. Organizations are expected to demonstrate responsible practices that align with societal values and norms.

19. Innovation and Technology Adoption. Innovation and the integration of advanced technologies play a pivotal role in modern logistics management. Organizations are constantly seeking innovative solutions to enhance efficiency, reduce costs, and improve customer experiences.

Questions:

1. What are the principles of Taylor's scientific management? Explain them.
2. What are the techniques of scientific management according to F.W. Taylor? Explain them
3. What is the essence of the theory of human relations in management by E. Mayo?
4. What are the principles of management by A. Fayol? Explain them
5. What is the essence of the theory of rational management by P. Drucker?
6. What are the prerequisites for corporate governance?
7. What are the prerequisites for logistics management?
8. What are the basic principles of logistics management?

Lecture 2. The essence, tasks and features of aviation management as an air transport management system

Contents. Basic definitions of regulation and management. An integrated system of effective logistics management, supply objects, and subjects of logistics activity. Aviation logistics management as an integrated system of administration and interaction of business entities of air transport. Features and main directions of effective logistics management of aviation companies. Criteria of air transport activity, aviation logistics and criteria of effective logistics management.

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Basic definitions of regulation, governance and management.

Regulatory Management, or Regulatory Compliance, is a set of policies, processes, controls and tools employed by an organization to comply with local and/or global regulatory policies, laws and standards.

Governance is purposeful actions regarding the process, object or system to preserve its stability or transition from one state to another in accordance with established goals;

Management is the science of managing a modern enterprise, the main content of which is a complex of scientific principles, methods of stimulation and organizational levers of influence on people's actions, the use of various resources in order to achieve strategic and tactical goals of the enterprise.

An integrated system of effective logistics management, supply objects, and subjects of logistics activity.

By orchestrating effective coordination between suppliers, manufacturers, distributors, and retailers, integrated logistics management improves production planning, reduces lead times, and enhances operational efficiency.

The supply objects in logistics activities can be any product of material and immaterial form that requires timely delivery from the place of its origin to the point of consumption of ordered goods, materials, information, finance, personnel, technology, work, operations, ideas, innovations, necessary to society and specific consumers.

The subjects of logistics activities in global logistics are the administrative bodies of the objects of logistics management, which are guided by the recommendations of international logistics organizations on partner interaction of economic entities of the global logistics flow and the terms of partner contracts.

Aviation logistics management as an integrated system of administration and interaction of business entities of air transport.

Aviation logistics governance is a system of actions and decisions for managing the transitions of flow processes in the aviation logistics supply chain.

Aviation logistics management is an integrated system of administration and partnership of interacting business entities of the aviation logistics supply chain.

The purpose (ultimate goal) of aviation logistics management is the management of a set of aviation resources combined into a logistics system, which allows minimizing circulation costs by providing the necessary aviation logistics services and optimizing (rationalizing) the relevant material, information, service and other flows in the aviation logistics supply chain .

Aviation logistics management significantly affects the state of financial, economic and legal support of forms of interaction in market conditions. On the contrary, there are new requirements for the communication support of economic relations, for the market of aviation transport services, the organization and functioning of the warehouse economy, the development of transport services in intermediary organizations and at aviation enterprises. At the same time, economic methods of air cargo delivery are comprehensively considered, evaluated and selected, progressive commercial and legal norms and rules, tariffs and transport documentation are applied.

The task of aviation logistics management is to coordinate the economic interests of direct and indirect participants in aviation logistics activities on the basis of maximizing the effect of synergy and obtaining social profit.

Features and main directions of effective logistics management of aviation companies.

Features of Logistics Management for aviation companies:

1. Inventory Management.
2. Air Transportation Planning.
3. Supply Chain Management.
4. Air Terminal Management.
5. Information System & Technology.
6. Air Demand Forecasting and Planning.
7. Procurement & Supplier Management.
8. Risk Management.
9. Sustainability & Green Logistics.
10. Real-time visibility.

The main features of logistics management are as follows:

1. The presence and constancy of movement in specific spatial-temporal coordinates of the main and accompanying logistics flows.
2. Partnership relations between enterprises and units that belong to the logistics flow infrastructure.

3. A general system synergy effect of the integration of systems and resources.
4. Structural separation of units and organizations that perform flow processes.
5. Planning and synchronization of movement in the logistics flow.
6. The formation of a corporate system for coordinating the interests of organizations participating in the logistics chain.
7. Coordination and control of the relevant results of the participants in the logistics chain with the general system logistics goals.
8. The formation of direct and feedback links of information logistics communications.
9. Optimization of routes and trajectories of movement of the material flow based on the criterion of minimizing total logistics costs.
10. Ensuring the continuity of preservation and safety of goods traffic.
11. The combination of stability and possible adaptation of logistics processes to changes in the situation.
12. Reservation of the capacities of communication means to compensate for possible disruptions in the logistics chain.

It should be recognized that logistics management, even solving micrologistic internal problems of the enterprise, focuses on macrologistic regularities of managing an extremely complex supersystem of end-to-end continuous inter-firm, inter-industry and inter-regional flows, chains, processes and systems.

Market conditions for the coordination of various types of logistics activities lead to the adoption of compromise decisions regarding cost options related to the main phases of logistics and types of logistics services in the process of which efficiency and basic and additional values of logistics management are formed (Fig. 2.1).

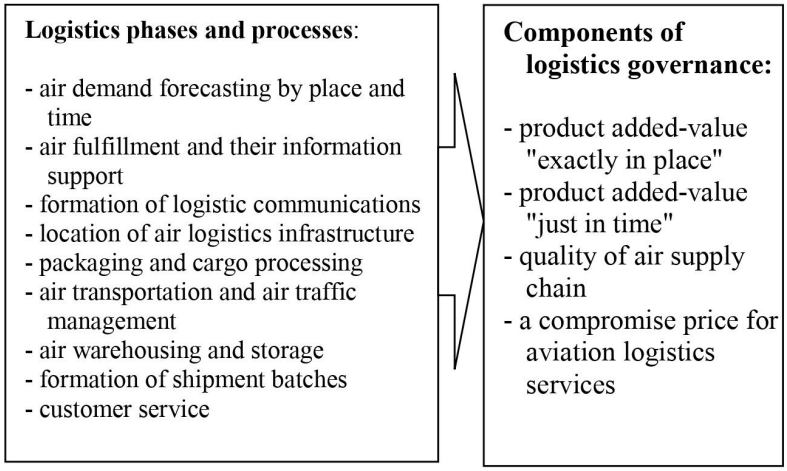

Figure 2.1 – The scheme of effective logistics management of aviation companies

Aviation logistics management thus integrates the efforts of legally independent, autonomous and dependent employees of a single complex aviation logistics system. The mechanisms of implementation of traditional management functions - planning, organization, motivation, control and coordination - use methods of administration, organizational and management activities, methods of economic and corporate management in the aviation logistics chain system.

Criteria of air transport activity, aviation logistics and criteria of effective logistics management.

Criteria for Commercial Passenger Airline Activity:

Available seat miles is a measure of capacity calculated as the number of seats available multiplied by the distance traveled.

Capacity is a measure of total seats operated by an airline or multiple airlines between two nonstop segments.

Domestic destinations served is the number of airports served with nonstop flights within an one State.

A passenger boarding a flight at a given airport is an **enplanement**. This includes passengers boarding an aircraft from a previous (connecting) flight.

Essential air service carriers that operated flights.

Frequency is the number of departures, commonly measured as the average number per day. This measure typically reflects scheduled operations, as opposed to operations performed. (The two may differ for multiple reasons, but most commonly because of cancellations due to weather or other airline operational issues.)

International destinations served is the number of airports served with nonstop flights outside of an one State.

Origin and destination traffic. Passengers fly between a point of origin (O) and a point of destination (D). The "O&D record or routing" reflects the full itinerary that a passenger flies and may contain one or more segments or flights. O&D routings with one segment are called nonstop. The volume of O&D traffic in a city-pair market is a measure of the total demand for air travel between the two locations.

Passengers per day each way (PDEW) is a common demand measure of O&D passengers in the form of one-way directional passengers per day.

Regional aircraft. Regional aircraft most often refers to an aircraft with fewer than 76 seats.

Revenue passenger miles (RPMs) is a measure of traffic demand calculated as the number of revenue-paying passengers carried multiplied by the distance traveled.

"**Service**" (minimum flights). Because airlines may launch or end operations at different times within a year and because some airlines may operate only occasional (or seasonal) flights, to sustain or facilitate economic activity between two points, some minimum number of flights (departures) is often set as defining "service."

Criteria for Commercial Cargo Freight:

Air "Cargo Tech"/Cargo Community Systems. Airports and their cargo communities are adopting new technologies to increase efficiencies in air cargo processes and supply chains. Cargo community systems (CCSs) are promoted as a way to solve congestion issues around airports. CCSs can help with trucking and freight forwarding to reduce on-airport wait times; increase efficiency and accuracy of information and communications; increase productivity, throughput, and utilization of resources; and increase capacity within existing cargo-related facilities and infrastructure. Most CCSs involve usage by a number of cargo stakeholders (shippers, airlines, ground handlers, freight forwarders, truckers, etc.) of a common technology platform to exchange information relevant to shipment status and readiness for handling by these parties. At this time, CCSs are most appropriate and applicable to larger international gateway airports where there are more stakeholders involved in international shipments and the process is complex.

Air exports are the total physical movement of merchandise out of the United States to foreign countries by air, recorded by weight and value.

Air freight is property, other than express freight, being transported by air.

Air imports are the total physical movement of merchandise into the United States from foreign countries by air, recorded by weight and value.

An all-cargo carrier is an air carrier operating only freighter aircraft exclusively for the purpose of transporting cargo.

Commodity. The type of products that are shipped, which are categorized using the harmonized categorization system to varying levels of specificity.

E-commerce (electronic commerce) is defined as the commercial transaction of money, funds, and data and buying and selling of goods, products, or services via the internet.

Express freight is property, other than passenger baggage, for which a premium over standard freight prices is charged for faster delivery.

An express freight carrier is a carrier handling all aspects of the supply chain for freight, including pre-shipment, shipment, and post-shipment transportation processes (e.g., FedEx, UPS, and DHL).

Tons shipped is the total weight of an entire shipment reported in pounds; pounds are then converted to short-tons (2,000 pounds) and displayed in thousands.

Value of shipment is the dollar value of the entire shipment, excluding taxes or fees, expressed in millions of dollars.

Question:

1. What is Regulatory Management?
2. What is Governance?
3. What is Management?
4. What does integrated logistics management improve?
5. What are the supply objects in logistics activities?
6. What are the subjects of logistics activities in global logistics?
7. What is aviation logistics governance?
8. What is aviation logistics management?
9. What is the purpose of aviation logistics management?
10. What is the task of aviation logistics management?
11. What are features of Logistics Management for aviation companies?
12. What is Available seat miles for Commercial Passenger Airline Activity?
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18. What is Tons shipped for Commercial Cargo Airline Activity?

Lecture 3. Theoretical and methodological foundations of aviation logistics management

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4. Logistics processes: key points for optimising your supply chain URL: https://www.mecalux.com/blog/logistics-processes

Basic regulations, standards and rules of regulation of international air transport.

Regulation is the giving of authoritative direction to bring about and maintain a desired degree of order. All regulation involves regulatory process, various patterns of activity by people interacting to establish and maintain some desired result for the subject or entities being regulated. Similarly, all regulation involves regulatory structure, i.e. the organizations or other entities involved and the legal framework (such as licences, regulations and agreements). Finally, all regulation involves regulatory content, the particular subjects being regulated (such as market access, pricing and capacity).

The process and structure of international air transport regulation have three distinct venues — national, bilateral and multilateral.

National regulation of air transport is regulation undertaken by a State within its territory in its exercise of sovereignty over that territory and the airspace above it. Thus national regulation extends to both domestic and international air services and to both national and foreign air carriers. The national regulation of international air services must take into account the State's international obligations pursuant to bilateral and multilateral agreements and arrangements and should give due regard to the actions and concerns of other States.

The process of national regulation of air transport services has three basic components:

• legislative (i.e. the making of laws, policies, rules and regulations);

• licensing (i.e. the granting, conditioning, denying or withholding of permission to conduct air transport services on a continuous or long-term basis); and

• ad hoc authorization (i.e. the granting, conditioning, denying or withholding of permission for individual tariffs, flights, etc.);

• each of which are complemented by enforcement actions taken if and when required.

Bilateral regulation is regulation undertaken jointly by two parties, most typically by two States, although one or both parties might also be a group of States, a supra-State (i.e. a community or other union of States acting as a single body under authority granted to it by its member States), a regional governmental body or even two airlines (for example, in the determination of capacity or prices).

Multilateral regulation is regulation undertaken jointly by three or more States, within the framework of an international organization and/or a multilateral treaty or agreement, or as a separate specific activity, and may be broadly construed to include relevant regulatory processes and structures, outcomes or output written as treaties or other agreements, resolutions, decisions, directives, or regulations, as well as the observations, conclusions, guidance and discussions of multinational bodies, both intergovernmental and non-governmental.

The International Civil Aviation Organization (ICAO) is the worldwide intergovernmental organization created by the Convention on International Civil Aviation signed at Chicago on 7 December 1944 to promote the safe and orderly development of international civil aviation throughout the world (website: www.icao.int). A specialized agency of the United Nations, it sets international standards and regulations necessary for safe, regular, efficient, economical and environmentally friendly air transport and serves as the medium for cooperation in all fields of civil aviation among its Member States.

Apart from intergovernmental organizations, there exist numerous worldwide, regional and trans-regional non-governmental organizations. Some of these organizations, from time to time, or in some cases on a recurring basis, seek to influence the governmental regulation of international air transport directly or indirectly. Many typically do so by aggregating the commonly held views of their members on matters relating to international air transport and articulating such views, publicly and/or through communications with (and participation in various meetings of) governmental and intergovernmental bodies. Others undertake or sponsor studies which can inform or influence those conducting international air transport regulation. Their degree of focus on air transport issues, as distinct from other issues, varies by organization.

Market laws of logistics as a methodological basis for the unity of logistics management.

The methodological basis of logistics management is the laws of economy, organization, management and marketing, which form logistics chains, flows, networks and systems of movement and transformation of supply objects, as well as provide management and regulation of the functioning and development of logistics business entities.

The main market laws of logistics: competition, cyclicality, partnership, quality, purpose and scale. The content of each of these laws reveals the possibilities of optimizing logistics activities.

Evolution of logistics management methodology and its main stages: reactive logistics, marketing logistics, strategic and global logistics management.

The evolution of logistics management methodology includes several stages:

1) reactive logistics management is management of logistics processes based on identified deficiencies that occurred due to critical phenomena and other events that occurred;

2) marketing and logistics management at the stage of integration of logistics principles and marketing technologies.

Marketing research establishes the need, the needs of society, forms requirements for a specific product, determines the volumes and dynamics of demand and supply, produces the optimal level of quality parameters. In this way, the achievement of 3 marketing logistics components of the criterion is ensured: functional goods, production and sales volumes, product (service) quality.

Purely logistical additional conditions are the delivery of products to the right place, to a specific customer, at the set time and with the lowest costs. Thus, it is logistics that ultimately optimizes the volume of orders, the time and type of transportation, the level of stocks, ensuring a systematic saving of costs and temporary resources throughout the chain of production and consumption of products.

3) strategic logistics management is management of logistics activities using scientific methods of forecasting its development and optimization for the medium and long term, taking into account the expected changes in productive forces and interests of companies.

At this stage, logistics processes are deregulated and logistics management is corporatized instead.

4) global logistics management is integrated management of supply chains in geoeconomic systems.

Principles of effective logistics management:

- continuity and dynamism;
- flexibility and adaptability;
- promptness and situational awareness;
- purposefulness and realizability;
- efficiency and economy.

Logistics management of global supply chains allows to implement a modern logistics management system in real time according to predictable changes using virtual systems, artificial intelligence and other electronic capabilities.

Hierarchy of logistics activities and levels of logistics management

Logistics management methodology assumes a certain hierarchy of logistics activities. Depending on the scale of integration of logistics flows, 7 levels of logistics management become quite obvious:

1) global logistics management of supply chains;
2) corporate inter-firm management of logistics networks;
3) management of logistics systems of enterprises;
4) cross-functional management of phased logistics processes;
5) management of separate functional phases of logistics;
6) management of interoperational logistics in production and technological flows;
7) intra-operational logistics management of works and transitions.

The hierarchy of logistics management system formation processes determines the relevant branches (levels) of management decision-making:

1) formation of logistics mission and logistics strategies;

2) organization and development of changes in the logistics network, system, flows and their management schemes;

3) identification of logistics business processes, unification of typical management solutions;

4) processes of controlling and further improvement of each stage of logistics activity management;

5) creation and functioning of the information base of logistics activities.

Logistics mission and logistics goals.

Logistics mission is the core logistics purpose of an organization or a company. It is a summary of the logistics aims and core values.

A logistics mission tells what you as an organization do for logistics support of customers. A logistics mission is comprehensive but also very specific to set you apart from other organizations in logistics support.

The main goals of logistics management:

Enhanced Efficiency. Enhancing the efficiency of both inbound and outbound logistics will always stay on top of logistics management service. They will require to give reasonable transportation charges along with decreasing the overhead costs, inventory, and its charges for every order processing. As they function with attached links to a transportation provider, various storage functionalities in warehouses can be enhanced meaningfully.

Fulfilling Customer requirements. A satisfied customer is key for the comprehensive success of logistics management. With the advent of the latest technology, it is possible to carry several logistics functions even at the last moment. The goal is to avoid any extreme inventories that were traditionally piled in the eagerness of customer needs. The logistics management company must be able to modify the functioning capability from a defensive mode and shift accelerating towards effectively answering customer needs depending on the needs of the delivery.

No surprises. Any surprises with an interruption during the involved processes like development of goods, and the process of coming to the destination with any damage, delays with the customer order receipt, improper delivery, can all contribute to wastage in time and resources. Reliant on how much a logistics management firm can reduce such events, there will be an enhancement in productivity along with chances of reaching new levels.

Regular maintenance of Quality. Logistics costs cannot be inverted back once it is completed. If there is a failure in quality, the functionality will require the issues of being repeated to complete the order properly. This would be double the cost of redoing a customer order. This may be due to the result of wrong shipment or damages to the goods during delivery. So, one of the main objectives of logistics management always includes maintenance of optimal quality.

Reduced charges for Transportation. One of the major costs linked with all types of logistics management is transportation. Reducing the cost of transportation needs streamlining of movements, accurate management of products at appropriate timelines.

Keeping Inventory levels minimal. The emphasis on decreasing inventory levels to minimal probable amounts will reduce the costs for the company. It will also fulfill customers with optimal delivery, while also achieving the desired operational objectives.

Organization and functioning of logistic business processes, networks, chains, flows, systems.

The features of the logistics flow as a management object:

- the logistics flow is an ordered inseparable set of material and non-material resources that constantly move in specific space-time coordinates along the logistics chain;

- functional flow processes of extraction, procurement and transportation of resources; production, storage and sale of products; consumer service, although performed by different

enterprises, but united by the single goal of transforming initial resources into products that satisfy consumer needs;

- the dominant factor in the logistics flow is the system-wide (economic) effect, which even in market conditions is achieved by coordinating, as a rule, the opposite economic interests of organizations integrated into the logistics system on the basis of effective use of resources;
- the logistics flow is an effective supersystem, as a complete set of logistics chains of the main - material, financial, information - and accompanying - service, personnel, energy and other flows.

Effective flow management is implemented through the management of labor distribution junctions in technological chains. In particular, the following are the means of achieving effective management of joints:

- administrative actions related to the management of various areas of the integrated logistics system;
- administration of the logistics system, implementation of logistics functions and processes to achieve the goals of the logistics system;
- personnel who manage the logistics processes of the management hierarchy at different organizational levels.

Management of logistics flows involves:

- formation of the flow as a single whole;
- organization of constant flow movement;
- constant transformations of supply objects in space and time;
- availability of basic quantitative parameters of the flow (starting and ending points, path, length of the path, speed and time of movement, intermediate points of the flow).

Logistics processes encompass all activities through which a product passes from its manufacture to its delivery to the end customer. This includes transport, storage and eventual distribution. The aim is to deliver the requested quantity of materials at the right time and place and at the price agreed upon in advance.

The first step in having an optimised supply chain is to tightly manage all the activities involved in the different logistics processes. Companies must ensure that resources and information are properly distributed throughout all the links in their logistics chain.

In a context in which Industry 4.0 is taking centre stage, automation in logistics is the solution that more and more companies are turning to so as to remain competitive. The management of logistics processes improves considerably when all or part of the operations in the supply chain are automated, including the transfer of information.

Hierarchy and heterarchy of logistics systems management.

Hierarchy is the arrangement of parts or elements of a whole in a certain order from higher management level to lower one. Heterarchy is a system formed by intersecting, diverse and simultaneously coexisting governance logistics systems structures.

The concept of heterarchy is complementary to the concept of hierarchy. If the hierarchy of the system is reflected in the connections of management (superordination, domination) and subordination (subordination), then heterarchy is reflected in the connections of coordination. Elements existing in a heterarchical state are in diverse but equivalent relationships. The hierarchical system has a unidirectional progression; as you move up the management ladder, there are fewer control elements. Heterarchy structures the system according to a wide variety of connections, depending on the position and attitude of the observer; it is impossible to identify a specific progression. No one method of structuring in heterarchy is dominant. Any structure of heterarchy is perceived by the observer as incomplete and is accompanied by a feeling of inconsistency, which pushes him towards a new structuring.

Organizational and economic mechanisms of effective aviation logistics management.

The joint use of certain goals, criteria, processes, methods and forms of logistics management forms a modern organizational and economic mechanism of aviation logistics management.

Organizational and economic mechanism of aviation logistics management (OEM ALM) is a structured complex of functions, processes, methods and tools, the interconnected functioning of which ensures the achievement of the system goals of logistics.

The basic principles of creation and functioning of OEM ALM are:

a) logistic integration of marketing, production, distribution, delivery and consumption management business processes;

b) participation of the subjects of logistics activity in the formation of system-wide goals and their implementation in cooperation with partners through the timely and high-quality performance of their functions;

c) holism is subordinating local goals and individual business processes to the final goals and results of joint logistics activities;

d) continuity of synchronization and management of integration and movement of the main and accompanying flows (commodity, information, financial, etc.);

e) achievement of results:

- minimum time
- minimum risks
- optimality of orders
- maximum service
- maximum synergy.

In accordance with the goals and criteria of effective logistics management, the management mechanism ensures:

- formation of logistics systems, chains and flows;
- management of the movement of logistics flows;
- management of the transformation of supply objects in logistics chains and flows.

The successful functioning of OEM ALM involves the alternative and optimization of processes and solutions in accordance with the conditions and opportunities of the external and internal environment.

Questions

How is international aviation activity regulated at the national level?
How is international aviation activity regulated at the bilateral level?
How is international aviation activity regulated at the multilateral level?
What are the main market laws of logistics?
What are the stages of evolution of logistics management?
Describe levels of logistics management.
What are the goals of logistics management?

Lecture 4. Scientific principles of aviation logistics management

Contents. Process system as the basic basis of effective logistics management. Main properties of the system. Integrated logistics systems in air transport. Qualities of logistics systems. Complex and integration principle of management. Use of the marketing-behavioral principle of management. Reproducible and optimization management principle. Optimization of investment and resource provision of management decisions based on the use of economic and mathematical methods. Applying of the situational and variable principle. Directive-dynamic principle of management. Use of the functional-cost principle in the system of economic regulation of aviation tariffs and fees.

List of reference:
1. Кулик В.А., Григорак М.Ю., Костюченко Л.В. Логістичний менеджмент: навч. посібник. К.: НАУ, 2012. 260 с.

Process system as the basic basis of effective logistics management (ELM).

ELM is a system of management of socio-economic subjects of logistics activities, which carry out:

a) establishment and formation of logistics mission and goals;

b) transformation of resources into a logistics service with benefit for the customer (consumer) and benefit for oneself;

c) development of rational management solutions for the implementation of complex logistics processes with the lowest costs;

d) achievement of effectiveness in the field of management of logistics activities;

e) implementation and assessment of effective management criteria:

- effectiveness of management decisions;
- quality of preparation, adoption and implementation of decisions;
- cost-effectiveness of the management system in the logistics network as a whole;
- profitability of each element of the logistics system, business process, functions, stage;
- performance of management strategies;
- innovativeness of management methods, technologies and tools;
- the social value of targeted customer orientation and the development of logistics infrastructure.

Fig. 3.1. defines the specialized areas of ELM:

a) management of the formation and effective functioning of logistics systems (chains and flows);

b) management of the movement of objects of logistic activity;

c) management of the transformation of supply objects in flow processes (input-output);

d) performance management (how best to manage with minimum costs and maximum benefit), effectiveness (with what consequences to manage), usefulness and efficiency (with what purpose to manage (for the customer and for yourself) management decisions).

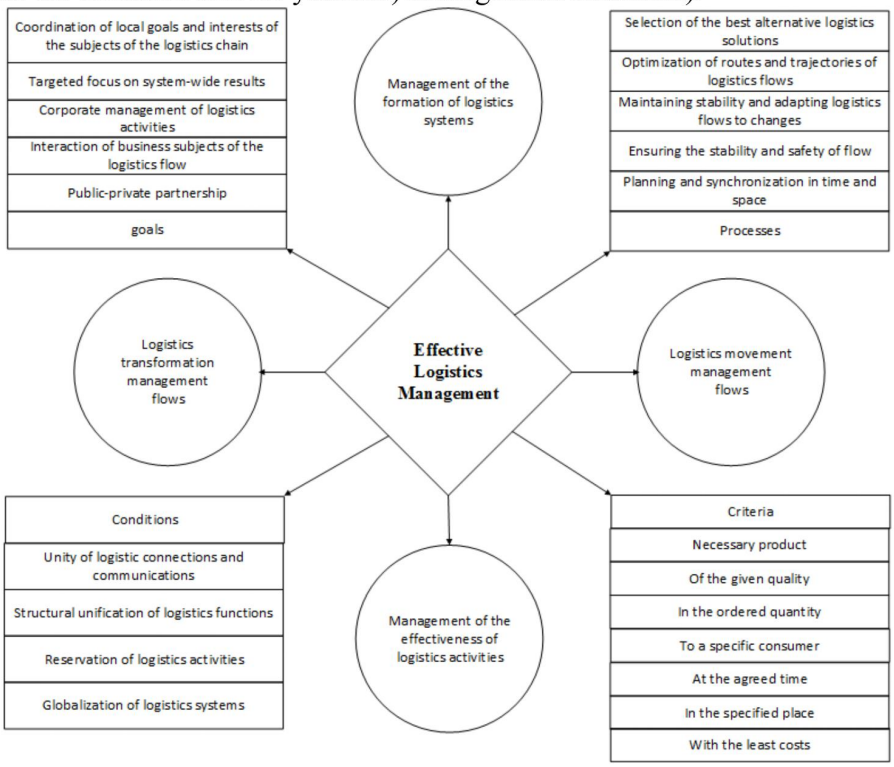

Fig. 3.1. Scheme of effective management of logistics activities

The main feature of the system-process management principle is the presence in the whole management system of necessarily components - processes and works that transform primary resources into final products.

This principle forms a system of logistics activity processes and the complex provides these processes of subjects, and even a system of their management, i.e. Logistics management system according to the ELM scheme→ logistics subjects → logistics processes.

Main properties of the system. Qualities of logistics systems.

The defining qualities (characteristics) of the logistics management system are:

- non-additivity -: less for an incomplete quantity (warehouse without transport), more – for a full stock of elements (logistics center);
- synergism 2+2=5, which represents the complementary complementary effect of the whole against the sum of the components;
- stability or adaptation in the external environment depending on specific conditions and tasks;
- complexity of functioning and multi-criteria evaluation of actions and results;
- dynamism and alternative self-development;
- Priority of global system interests;
- balance and reliability.

Integrated logistics systems in air transport.

Integrated logistics in air transport covers and combines into a single process such activities as information exchange, air transportation, inventory management, air terminal management, air cargo handling and packaging.

It is based on a systemic approach that covers all activities related to the planning and management of flow economic processes that flow in aviation logistics chains. At the same time, the issues of interaction between cargo consignors and cargo consignees, logistics operators, enterprises-consumers of service services are considered in the context of the creation of common logistics resources, their effective and efficient use

Complex and integration principle of management.

The complex and integration principle of management provides for the formation of integrated logistics flows, which consist of local chains of movement and transformation of material, financial, information, energy, personnel and other types of resources and assets of the logistics system.

The combined complex of interacting local flows creates conditions for partnership and achieving systemic flow results in aviation supply chains (Fig. 3.2).

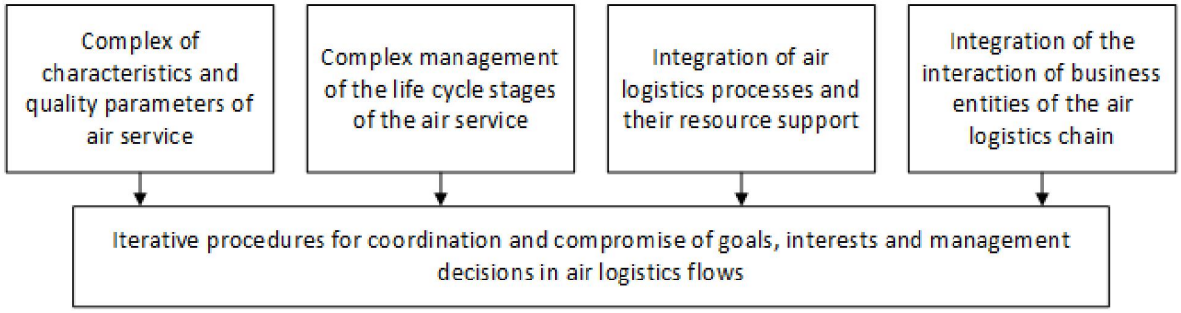

Fig. 3.2. The essence of the complex integration scheme of logistics management

The unification of entities managing a complex integrated logistics flow horizontally and vertically promotes their interaction through the development of partnership relations with the appropriate distribution and cooperation of labor between organizations that are participants in the air logistics system.

Use of the marketing-behavioral principle of management.

The application of this principle ensures the orientation of all links of the air logistics chain to the end user and his strategic needs, which guarantees the social significance of logistics services for society (Fig. 3.3).

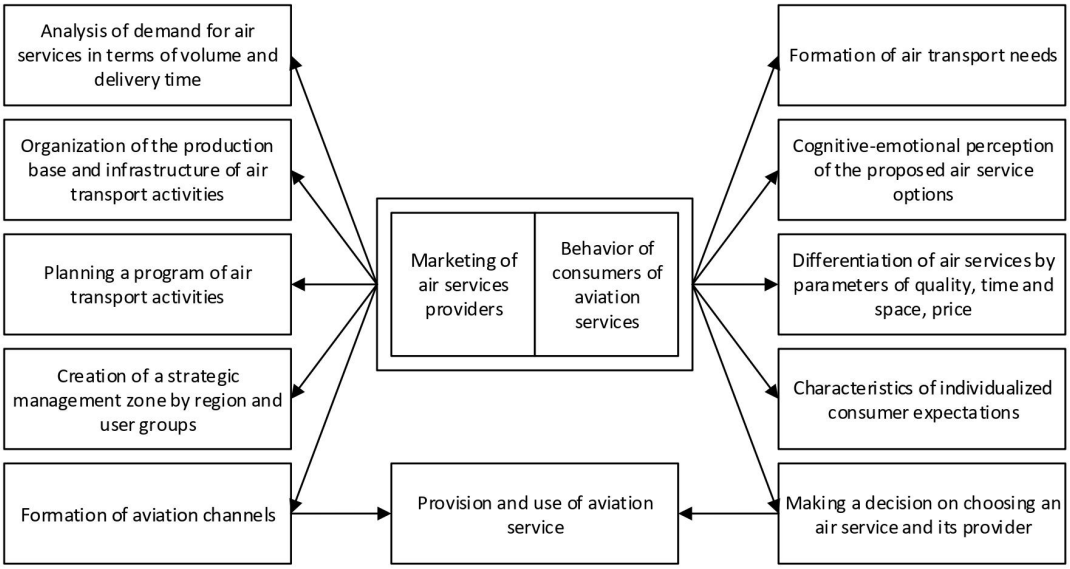

Fig. 3.3. Unity of provider's marketing and consumer behavior

Reproducible and optimization management principle.

The use of this principle involves:

a) economic-mathematical modeling and optimization of multi-criteria dynamic processes. In logistics systems, the measure of efficiency is the mandatory conditions of partner interaction of the subjects of the aviation chain, under which the overall effect is achieved by varying the criteria by the systems at the local level of individual processes, systems, organizations;

b) forecasting of strategic price changes in the markets: passenger, cargo, resource, investment and others for the formation of a financial flow that accompanies the main air passenger or air cargo flow;

c) ensuring that revenues from the sale and provision of aviation services exceed the amount of contributions, participating enterprises at all stages of these chains for the purpose of compensating investment contributions and maintaining funds for the expanded reproduction of aviation services;

d) the orientation of the air flow to the conditions of optimal use of the main market laws: the law of conformity of the spheres of production and consumption, the law of the efficiency of the scope of work, the law of saving time at all stages of the air chain;

e) ensuring unity, optimization of organizational and technical management decisions and economic results;

f) creation of aviation chain objects oriented to prospective requirements and future conditions of execution of aviation flow processes.

Optimization of investment and resource provision of management decisions based on the use of economic and mathematical methods.

Economic and mathematical methods are used to optimize management decisions of effective logistics management (Fig. 3.4). With their help:

- formation of logistics information base;
- systematization of logistical problems;
- ranking and identification of tasks;
- definition of criteria, factors, conditions and limitations of solved tasks;

- algorithmization and development of typical solutions implementation programs;
- finding the multi-criteria area of opt solutions, etc.

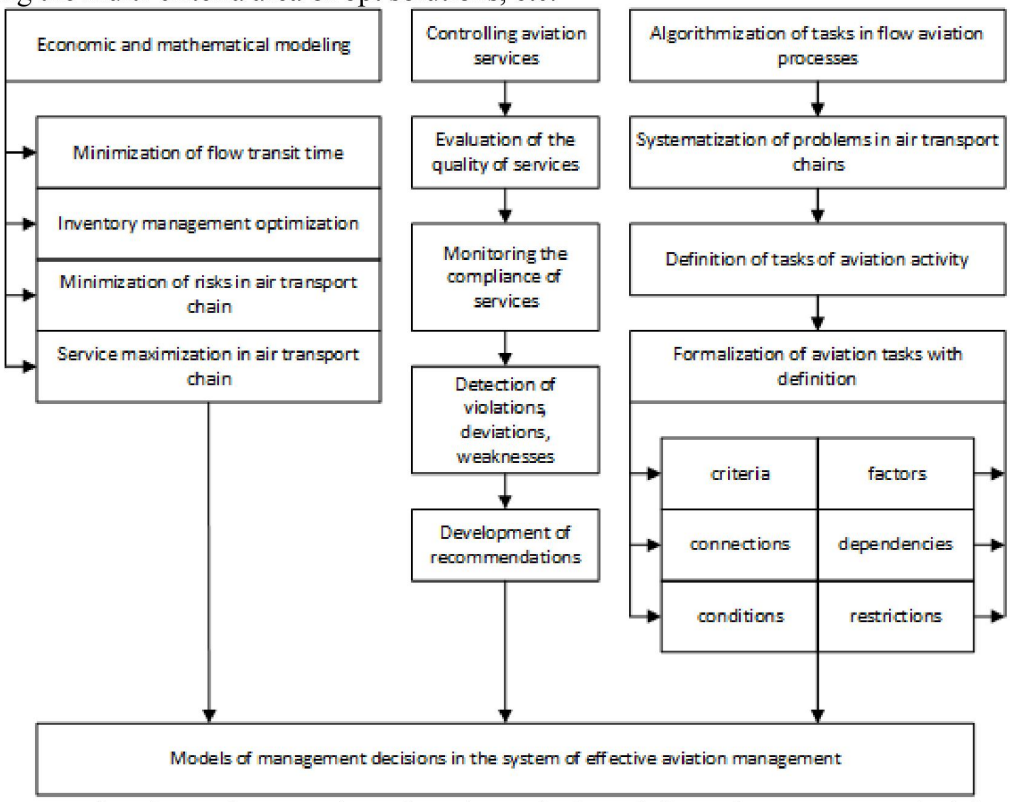

Fig. 3.4. Directions of economic and mathematical modeling of management decisions in aviation management

Applying of the situational and variable principle.

The effectiveness of aviation activity depends equally on the situation in the external market environment and on the state of the internal sphere of the aviation system. The scheme for managing the operation of aviation business processes is built taking into account the development of events in the future and the build-up of changes, deviations and delays in the operation of terminals (passenger and cargo) or relevant divisions of aviation enterprises. The alternative or variability of management according to situations that arise as a result of planned, partly predictable and unpredictable changes is a consequence of market uncertainty.

The variable-situational approach provides:

a) flexible selection and adjustment of strategies and tactics: survival, stabilization, reengineering, innovative restructuring or complete transformation of the aviation business;

b) the use of different management methods depending on the specific situation at each stage of the air chain;

c) alternative aviation flows, trajectories of the aviation chain subjects;

d) the probabilistic nature of aiming adjustments in the direction of the air flow depending on the time and place of possible current failures and strategic changes.

Directive-dynamic principle of management.

The directive-dynamic principle provides for:

a) implementation of the system of the main economic goals of air logistics, in the process of managing the movement and transformation of resources;

b) dynamic and coordinated development of individual elements of the aviation system based on the use of methods of analysis, forecasting and synthesis in the management system;

c) establishment of cause-and-effect relationships of industrial and economic events in the airline chain to justify the expediency and necessity of making management decisions;

d) clear regulation of functions, criteria, standards of interaction of participants in aviation processes; formation of target standards of quality and processes;

e) the obligation of uninterrupted functioning of the system of strategic and operational-calendar movement planning of the entire aviation chain;

f) the presence of a directive and regulatory influence on the aviation processes of the entities of the external environment;

g) taking into account the growing pace of scientific and technical progress in the field of forming new needs, the appearance of new products, and the development of new technologies.

Use of the functional-cost principle in the system of economic regulation of aviation tariffs and fees.

This principle includes:

a) formation of the composition and structure of the aviation service in accordance with the real need;

b) assessment of necessity, justification (substantiation) of each element of aviation costs;

c) cost management in the aviation chain according to the stages of the life cycle of the aviation service and the stages of the management cycle;

d) comparative analysis of costs of competing airlines;

e) functional and cost analysis of the qualitative and quantitative characteristics of the aviation chain with the aim of their optimization.

Questions.

What are the specialized areas of ELM?

What is the main feature of the system-process management principle?

What are the defining qualities (characteristics) of the logistics management system?

What is the essence of the complex and integration principle of management?

What is the essence of the reproducible and optimization management principle?

What is the essence of the situational and variable principle?

What is the essence of the directive-dynamic principle of management?

What is the essence of the functional-cost principle?

Lecture 5. Functions of logistics management of airlines

Contents. The concept of production (operation) functions of logistics: ordering, transportation, production, warehousing, distribution, implementation, consumption, customer service. Functions of logistics management: 1) logistics goal setting, 2) logistics planning, 3) organization of logistics activities, 4) motivation of activities, 5) coordination of the movement of supply objects and interaction of logistics subjects, 6) controlling the formation, provision and use of logistics functions.

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The concept of production (operation) functions of logistics: ordering, transportation, production, warehousing, distribution, implementation, consumption, customer service.

Functions are an organizationally separate type of specialized activity characterized by unity of purpose, uniformity of work and technologies, and a general management system.

The logistics approach to management is based on the management of flow processes and entities implementing these processes within the aviation chain for specialized autonomous phases of logistics activity.

They differ:

Production logistics functions is management of individual activity phases of aviation logistics:
a) procurement of materials to ensure the aviation chain;
b) formation of the reservation system, sales channels of aviation services;
c) warehousing and storage of materials that provide the aviation chain and cargo;
d) transportation of passengers and cargo, as well as special passenger service, and cargo processing;
e) stockpiles of materials and their reservation;
f) aviation customer service and relations in the aviation chain

Functions of logistics management: 1) logistics goal setting, 2) logistics planning, 3) organization of logistics activities, 4) motivation of activities, 5) coordination of the movement of supply objects and interaction of logistics subjects, 6) controlling the formation, provision and use of logistics functions.

Logistics management functions are typical management functions related to the management of any production function (phase) of logistics:

1. The logistics goal-setting function provides for the allocation of logistics goals in accordance with 7 basic criteria of logistics (a product needed by society, of a given quality, in the required volume, for a specific customer, in the right place, at the right time, and with minimal costs).

The formation of goals is carried out in the form of the development of a "tree" of goals based on the following principles:
- hierarchy of goals;
- decompositions by levels of integration;
- disaggregation by phases of the aviation chain.

The following are distinguished in the structure of goals:
a) the mission and global goal of ensuring an integrated result according to 7 criteria of logistics;
b) main goals:
- satisfaction of needs in air services;
- creation of consumer value;
- obtaining a synergistic effect of partner interaction of business entities of the airline chain.
c) local logistics goals:
- performance of air transport volumes in full, on time and at agreed prices;
- ensuring safety, security and quality in airline chains;
- finding a compromise between system aviation costs and economic goals of business entities in the aviation chain.
d) private purposes of aviation business functions and business processes:
- by phases of aviation processes;
- by subjects of aviation activity.

2) Logistics planning function.

Includes several sub-functions.

2.1. A sub-function of operational-calendar planning, which includes annual, quarterly, monthly, decade-long, process planning of activities.

This subfunction defines:
- needs for air services within annual and quarterly time slots, both of the air systems in general and of individual economic subjects of aviation activity;
- formation of freight and passenger flows by nomenclature, volumes and time parameters;
- planning of resource, financial, informational, service support of passenger and cargo flows;
- planning of the scope of work from aviation logistics phases (work functions) formation of orders and purchases, cargo processing, transportation, warehousing and storage of orders, etc.;
- planning of airline customer service and complaints activities;
- budget and expenditure planning by articles: • staff salary, • consumables and energy resources

• rent, leasing, content of the fixed assets, • transportation costs, • storage costs, • risk insurance, programs, • business trip, • information and communication support, • depreciation costs, • transaction costs under contracts, • social insurance of employees, • office supplies, • representative expenses, • loan payments, • investment return, • training, professional development, • fines and payments, • control and audit, • bonuses.

2.2. The strategic planning sub-function defines:

a) general prospects for the development of logistics activity for the future period from 3 to 20 years;

b) taking into account possible global changes in the economy, provision of technical resources, demography, etc.;

c) lack of strict regulation in the plans regarding resources, terms, feasibility.

In the process of strategic planning, long-term goals of aviation activities are formed:

- assessment and selection of target markets;
- formation of goals for the operation of aviation chains;
- alternative structuring of the aviation chains;
- assessment and conditions for choosing partners, outsourcers;
- creation of a virtual system of corporate relations and supply chain management.

2.3. The sub-function of tactical planning of logistics activities implements:

- implementation of the strategy in specific projects and medium-term programs;
- determining the amount of necessary investments, types and sources of resources for each project;
- planning programs for the implementation of logistics projects;
- budget planning of projects, which organizes and controls financial flows, taxation, document flow;
- development, adoption and implementation of effective management decisions;
- monitoring, factor and resource analysis, expert diagnosis of project effectiveness.

2.4. The flow scheduling sub-function implements:

- material flow planning
- by nomenclature of supply objects:
- by supply volumes;
- stages of transformation of material values in the flow.

3) Function of organization of logistics activities.

The organization function provides organizational support for aviation management and provides for the division of management processes into 2 sub-functions:

1. Organizational structuring that ensures management statics by creating departments, systems and networks of aviation chains.

2. Organizational management that forms management dynamics in the form of management decisions and algorithms for their implementation.

4) Function motivation of activities,

The success and efficiency of aviation activity primarily depends on the level of system motivation:

a) aviation sphere of activity - interest and mass awareness by society of the necessity, importance and prestige of this sphere of activity (motivation of aviation development);

b) managerial activities – the need for organization and management of the integration of individual processes around any business function of aviation management and management of their interaction (motivation of aviation management);

c) individual labor activity of an executive nature (work motivation).

5) Function of coordination of the movement of supply objects and interaction of logistics subjects:

1. The function performs the organizational and coordinating mission of the interaction of logistics processes implemented by individual subjects of the integrated supply chain.
2. Organizes logistics activities in space and time:
a) formation of communication channels on the scale of each of the logistics systems: chains, flows, networks;
b) coordination of plans of interacting organizations of the logistics chain by nomenclature, volumes and terms of execution of logistics processes;
c) formation of strategic management zones of logistics providers;
d) management of adaptive segmentation of the logistics services market.
3. Performs synchronization:
a) movements of logistics flows;
b) functioning of logistics activities;
c) implementation of logistics processes and operations.
4. Ensures consistency of needs - demand - offers - orders - realization of goods and services.
5. Coordinates transitions, junctions, sequence of transformations of the supply object.
6. Adapts logistics chains and flows to the changing conditions of the external environment.

6) function of controlling the formation:
1. The essence is the function of managing the formation, adjustment and achievement of strategic goals and objectives of the firm's corporate strategy in the process of its functioning.
2. The structure of controlling sub-functions: planning, accounting, monitoring, analysis, identification of bottlenecks and failures in the logistics system, report, preparation of corrective decisions in real time and their information support.
3. The impact of controlling on the main stages of logistics management:
- at the goal-setting and planning stage:
a) coordination of the structure of the consolidated plan of the enterprise and the plan of logistics activities;
b) ensuring the synchronization and schedule of planning, determination of their resource provision and compliance with planning goals and results;
c) coordination of plans of logistic, production and functional divisions of the enterprise.
- the activity of monitoring and identifying deviations and changes in the internal and external spheres of logistics activity provides an opportunity and justification for adjusting plans and their implementation both in real time and in the future.
4. Organizational activities of controlling ensure:
a) coordination and interaction of all organizational structures regarding the implementation of plans and budgets, interconnection and assessment of the achievement of goals and results of logistics activities;
b) constant monitoring of logistics operations;
c) accounting and analysis of the organization of the management of the junctions of logistics operations;
d) efficiency of logistics networks and structures.
5. The coordinating activity of the controlling function carries out:
a) determination of the causes of the appearance of "bottlenecks" and "weak" places in logistics activities and their elimination;
b) creation of the necessary conditions for the planned flow of logistics processes;
c) increasing the flexibility of pharmaceuticals and their adaptation to changes in the external and internal environment;
d) development of preventive measures of the enterprise's anti-crisis policy.
6. At the stage of analysis of conditions, plans and procedures for the implementation of decisions, controlling efforts carry out:
a) forecast of future changes based on the events that have taken place;
b) cause-and-effect analysis of deviations and elimination of imbalance;

c) formation of an information base for making corrective decisions and measures;
d) application of methods and forms of differentiated cost accounting;
e) organization and accounting of costs and results by market segments, product range, customer groups, orders, places of cost formation;
f) control and provision of documented information (validation);
g) bringing it into line with the planned, actual, target assessment.

Questions
What is the essence of the production (operation) functions of logistics?
What is the essence of the logistics goal setting function?
What is the essence of the logistics planning function?
What is the essence of the function of organization of logistics activities?
What is the essence of the function of motivation of activities?
What is the essence of the function of coordination of the movement of supply objects and interaction of logistics subjects?
What is the essence of the controlling function?

Lecture 6. Methods and technologies of aviation logistics management

Contents. Specifics of organizational forms of business process management in logistics systems of airline companies. Classification of logistics management methods. Methods of effective logistics management: normative-legal, organizational-technological, research-analytical, economic, economic-mathematical, moral-psychological. Algorithms of management decisions in logistics activities of airline companies. Peculiarities of managing modern logistics technologies: customer orientation and complexity of logistics services ERP, MRP, DRP and other IT technologies in the management of logistics business processes and business functions.

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Specifics of organizational forms of business process management in logistics systems of airline companies.

Management methods are approaches that ensure the achievement of the set goals by the aviation logistics system.

Features of aviation logistics management methods:
- targeted focus on objects of aviation logistics activity;
- system integration of methods of action at all stages of the air logistics chain;
- optimization of the aviation logistics business system for the entire set of aviation logistics processes and criteria;
- the specificity of the organizational form of business process management in aviation logistics systems;
- compliance of methods with logistic principles.

Classification of logistics management methods:

a) by the time of logistical impact:
- strategic – trends and prospects;
- tactical – planned functioning;
- operational – correction of current situational deviations;

b) by the method of influence:
- direct influence - orders, instructions, contracts;
- indirect influence – setting tasks, forming performance conditions;
- indirect (induction) influence;

c) according to the principle of decision-making:
- unitary leadership (LPR of a certain hierarchical level);
- collectivism when making decisions of a general nature;
- collegiality of decisions made by councils, commissions, boards;

d) by target orientation:
- cognitive - informative, educational, training methods;
- evaluation - examinations, audits, conclusions;
- diagnostic – experimental and analytical;
- multi-purpose and multi-dimensional, defining areas of solutions;
- compromise - agreed;
- optimization - the most expedient according to optimality criteria;

e) methods of effective logistics management:

Normative and legal	— contractual relations — public-private partnership
Organizational and technological	— configuration of the aviation logistics system, chains, flows
Research and analytical	— identification of aviation logistic business processes
Economical	— motivation — stimulation — planning — synergy of logistics activities
Economic and mathematical	— development and adoption of management decisions and their implementation — monitoring of changes and deviations, correction of logistics services
Moral and psychological	— corporate culture of aviation logistics flow — management of resistance to change

Methods of effective logistics management: normative-legal, organizational and technological, research and analytical, economical, economic and mathematical, moral and psychological.

1. Normative and legal methods that guarantee:

a) compliance with domestic and international contracts for the provision of logistics services;

b) legal status of logistics enterprises and their divisions;

c) compliance with norms and rules of customs, border, law enforcement procedures and conditions;

d) involving international organizations in the field of logistics consulting, insurance, international transport corridors, "open sky", WTO, IATA and others in solving complex aviation logistics problems.

2. Organizational and technological methods, including: organizational regulation, organizational instruction, organizational regulation, which ensures:

a) formation of strategic and operationally significant logistics systems based on the technological sequence of interrelated operations, processes and phases of logistics;

b) implementation of logistics activities within the framework of structured logistics using flow algorithms and management procedures;

c) conclusion of partnership contracts, outsourcing contracts, rent, leasing, franchising.

3. Research and analytical methods of management ensure the identification of trends, tendencies, deviations, violations, comparisons and comparisons of characteristics and results of

logistics activities, which allows scientifically based forecasting and planning of the entire complex of logistics business processes and their provision.

Specific types of analytical research methods of the logistics services market:

- Marketing researches;
- diagnostic and thematic examinations;
- formation of situational dynamics of the life cycle of logistics services;
- studying the behavior of corporate and individual customers of logistics services;
- identification of causal relationships and dependencies in specific logistics systems.

4. Economic methods include a set of methods and tools for achieving the conditions of operation and development of the enterprise. They implement the following functions:

a) motivation and stimulation of economic structures of the logistics system;

b) ensuring the profitability of logistics activities, logistics products, logistics assets;

c) targeting of business entities on the synergistic effect of the interaction of all links of the logistics chain.

Logistic subjects fulfill the requirements of external economic systems, taxation, customs support, and also realize the possibilities of using mechanisms of crediting, pricing, economic sanctions, etc. incentives for efficient operation of logistics systems

Specific forms and targeted orientation of methods of economic influence:

- reduction of transit time in the logistics supply chain;
- reduction of costs for transportation, storage and other phases of logistics;
- tariff optimization and target planning of the market price of logistics services based on differentiated cost accounting;
- participation of state and municipal budgets in separate logistics projects;
- special infrastructure development funds, targeted land funds;
- risk minimization and redistribution.

5. Moral and psychological methods of logistics management implement:

a) formation of a business ideology of high goals and geo-economic significance of logistics activities, as well as awareness by logistics subjects of their corporate involvement in the fate of the world (and not just making money);

b) development of inter-company and inter-group partnership, interaction and mutual trust, joint work, mutual assistance of personnel of business entities of the logistics chain as a whole;

c) creation of a corporate organizational culture, unified moral and psychological values and principles of collectivism by activating the general intelligence of the personnel of the logistics system;

d) coordination of interests and overcoming the resistance of individual interacting subjects to system-wide goals;

e) optimization of the structure of logistics personnel and outstaffing;

e) intensification of the use of methods of increasing labor productivity and labor discipline;

g) development of the incentive system based on the final result;

h) resolution of conflict situations and humanization of work and labor relations;

i) monitoring and modeling of socio-psychological aspects of interaction and partnership;

k) assessment of the economic value of each employee during the planning of his business career;

l) fostering the desire to increase profits through strict control of costs, rationalization of processes, differentiated cost planning, innovative search.

6. Economic and mathematical methods are used to optimize managerial decisions of effective logistics management. With their help:

- formation of logistics information base;
- systematization of logistical problems;
- ranking and identification of tasks;
- definition of criteria, factors, conditions and limitations of solved tasks;
- algorithmization and development of typical solutions implementation programs;
- finding the multi-criteria area of opt solutions, etc.

Algorithm of management decisions in logistics activities of airline companies.

The rationality of management decisions in aviation supply chains largely depends on the technological process of their preparation and adoption. Thus, the American scientist S. Young claims that the process of making rational decisions includes ten stages that are adapted to management decisions in aviation chains:

1. Defining goals for aviation chains.
2. Identification of problems in the process of achieving defined goals.
3. Researching problems and clarifying their features.
4. Search for solutions to the problem.
5. Evaluation of all alternatives and selection of the most optimal of them.
6. Coordination of decisions at the internal level of the airline and at the external level with aviation and logistics providers.
7. Approval of the decision on aviation chains.
8. Preparation of the decision for implementation.
9. Management of decision implementation.
10. Checking the effectiveness of the solution.

Peculiarities of managing modern logistics technologies: customer orientation and complexity of logistics services ERP, MRP, DRP and other IT technologies in the management of logistics business processes and business functions

Companies must keep up with recent innovations and trends in managing the aviation industry's day-to-day operations. These innovative concepts must pave the way for new trends like data analytics, the Internet of Things, and automation systems. Because of these changes, aviation operations can be improved and run more efficiently. As the aviation industry grows, there are more chances for aircraft operations to use enterprise resource planning (ERP) systems to their advantage.

ERP for aviation provides the following benefits:

1. Automated Process. ERP for aviation helps to prevent duplication of work and irrelevancy, thereby improving productivity. Automated processes through ERP for aviation offers the following advantages:

- ERP facilitates controlling of the key business activities such as maintenance, operation and cost – all through a single unified system.
- ERP assists in dealing with the constant changes in configuration and different maintenance ideas required to complete a mission successfully.
- It ensures high standards of fleet dependability and airworthiness status.
- Inventory levels can be checked and procurement can be done at optimum levels with the help of ERP for aviation industry.
- ERP is compatible on mobile devices and thus gives users the flexibility to access the software while on the go.

2. Improved Visibility and Control across Departments. The labor costs, material costs, operations management etc. have to be looked at with great caution so as to prevent them spiraling out of control. In such circumstances, an elaborate view of the operations across every department is required. The unified information accessed across all the departments help in accurate decision making. ERP offers the following advantages for aviation:

- ERP for aviation provides a comprehensive view of the operations across different departments and helps to spot any irregularities occurring in the operations and thus efforts can be made to quickly fix them.
- ERP is dynamic in nature and is compatible with a wide range of portable devices that help in flexibility and ease of access from anywhere.

3. Multi-currency Accounting. Aviation industry is spread all over the world and there are multiple currencies involved. All organizations cannot afford to have different plugins for different

currencies. ERP enables the user to record multi-currency transactions, which gives flexibility to carry out global transactions on the go. Multi-currency accounting offers the following advantages for aviation:

- ERP streamlines foreign currency cash flow management.
- It enables to consolidate foreign and domestic accounts.
- ERP helps to reduce the risk of potential losses due to timing differences between incoming and outgoing foreign currency flows.
- It eliminates the need for opening accounts with foreign banks.
- Provides option for doing global transactions through one software.

4. Data Security. ERP is completely trustworthy as the data in it is completely secure. Different user levels can be set to keep confidential data visible based on permission. ERP for aviation offers the following data security advantages:

- Use of standard security enabled data storage formats and data exchange protocols ensure widest possible interoperability.
- It doesn't make you work overly hard on your data security maintenance.
- ERP uses a single data protection infrastructure across the entire data environment.

Managing airline and crew operations is complex and challenging but critical to ensuring optimal business performance, smooth passenger experiences, and brand protection. Covering the full spectrum from fleet planning all the way through to crew optimization and tracking, the IT-system is comprised of different modules that enable end-to-end airline operations and crew management. Through real-time dynamic situational awareness and process automation, iFlight generates unmatched efficiency, cost-savings, and productivity for airline of all sizes and business models.

There are five main types of players in flight booking process: airlines, Global Distribution Systems (GDSs), flight data aggregators (ATPCO, OAG, and Cirium), third-party travel retailers (OTAs, metasearch engines, traditional agencies), and airports.

A passenger service system (PSS) is a suite of software modules, supporting interactions between the carrier and its customers. Its key components are a central or airline reservation system (CRS), an inventory control system (ICS), and a departure control system (DCS.)

The PSS also comprises or integrates with a revenue management tool that analyzes historical data and sets pricing rules and an e-commerce platform (airline website) for flight and ancillary distribution. Some key players among PSSs are New Skies by Navitaire, Altea by Amadeus, and Avantik by Bravo Aero.

A central reservation system, also called an airline or computer reservation system, serves as storage for flight-related information like schedules, fares and rules for each booking class, passenger name records (PNRs), e-tickets, etc. It's also involved in managing booking requests and ticket issuing. Some airlines run their own CRS that may come as a part of the PSS. Yet, many carriers prefer to host and manage reservations on one of the GDSs.

A passenger name record (PNR) or booking file is a digital document that contains information about a traveler or group of travelers and their itinerary. Each PNR has a unique code called a booking reference or record locator. Thanks to this number, the file can be easily found in the CRS database. A traveler purchasing a flight gets the code via email and can use it to access flight details or check in online.

A Global Distribution System (GDS) is a computer network operating as a middleman between travel agents and numerous travel service providers. The three main GDSs to know about are Amadeus, Sabre, and Travelport.

Types of airport information management systems and solutions include, but are not limited to:

1. Airport operational database management (AODB) systems
2. Flight information display systems (FIDS)
3. Automated aircraft movement registration systems

4. Air traffic control and management systems
5. Aeronautical telecommunications network (ATN) solutions for ground-ground and air-ground data communications
6. Secure passenger processing solutions
7. Automated boarding pass verification systems
8. Aircraft load control software
9. Automated baggage handling software
10. Apron management systems
11. Emergency messaging systems
12. Automated immigration and access management solutions, and
13. Software products for airport analytics, concession management, and car park revenue management

Questions.
What are the features of aviation logistics management methods?
What are the classification of logistics management methods?
What are the normative and legal methods?
What are the organizational and technological methods?
What are the research and analytical methods?
What are the economic methods?
What are the moral and psychological methods?
What are the economic and mathematical methods?
What are the algorithm of management decisions in logistics activities of airline companies?

Lecture 7. Strategy and tactics of logistics management of aviation companies

Contents. Strategic planning of long-term logistics activities. The innovative nature of the development of economic entities of aviation logistics. Conditions, opportunities and expediency of creating stabilization, functioning, transformation, development and liquidation of logistics departments or enterprises and networks. The search for modern ways of implementing partnership and integration of enterprises and organizations of a complete system of air transport activities and logistics service for the production of the final product and service for the final consumer - the client-customer of complex logistics services. Applying of basic strategic directions of organization and management of logistics functions and business processes: diversification, specialization, concentration, differentiation, integration and competition of enterprises in the market of logistics services.

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Strategic planning of long-term logistics activities

The word "strategy" literally means "the art of the general". Strategy is a comprehensive comprehensive plan designed to form and achieve long-term goals of ensuring competitive behavior of the organization.

There are two approaches in the concept of strategy. The first is characteristic of centralized planned economies, that is, a specific long-term plan is meant, for which all changes in the external environment are predictable, and the processes taking place in it are deterministic. Otherwise, the strategy is a defined direction of the company's development in the conditions of changes and increased competition.

The developed strategy must remain intact for a long period of time and be flexible enough to modify or reorientate it if necessary.

Strategic management is the activity of forming, adjusting and implementing strategic development programs designed to achieve the company's goals and ensure its long-term competitiveness and profitability.

Logistics strategy is a long-term direction of development of logistics, which determines the forms and means of implementation, cross-functional and inter-organizational coordination and integration of programs of innovative development of logistics business in accordance with the corporate system goals of its organization.

Development of logistics strategy is carried out in four stages: assessment, analysis of opportunities, setting of priorities, implementation of a comprehensive long-term development plan.

At the evaluation stage, the logistics strategy is positioned in relation to the mission and corporate strategy of the firm on the market. The general economic and political situation should be carefully analyzed, the expected trends of their changes for a period of 5-15 years should be determined. The interaction of logistics strategy with marketing and production strategies is evaluated in more detail.

The logistics strategy should be developed in accordance with the company's corporate strategy and follow its mission. When developing this strategy, it is necessary to remember that its main purpose is logistical support for the implementation of the corporate strategy with the optimal expenditure of resources.

The group of growth strategies can include such as the strategy of concentrated growth (strengthening of market positions, development of market geography, product development), the strategy of integrated growth (integration with suppliers, with consumers, with competitors), the strategy of diversified growth (entering a new industry, into a related industry, into an unrelated industry, multinational diversification).

The group of strategies for stabilizing or maintaining the market can include the strategy of slow movement, the "pause" strategy, the strategy of reducing costs, etc.

The group of reduction strategies includes such strategies as partial renunciation of independence, "harvest", sale of assets, reduction of activities, bankruptcy, liquidation.

The focus of the logistics strategy can be aimed at:

- reduction of general operational logistics costs;
- increasing the productivity of the logistics infrastructure;
- improving the quality of logistics service;
- maintenance of the "costs / service" balance;
- outsourcing of logistics activities.

The innovative nature of the development of economic entities of aviation logistics

The modern innovative model of processes in the development of strategies of aviation enterprises is characterized by:

- consistently increasing growth rates of objects and forms of innovative improvement of all types of global business;
- processes of forced reduction of all stages of the life cycle of the components of the reproductive system;
- phenomena of technogenic exhaustion of society due to the constant appearance of new generations of equipment, technology, products and needs.

The search for modern ways of implementing partnership and integration of enterprises and organizations of a complete system of air transport activities and logistics service for the production of the final product and service for the final consumer - the client-customer of complex logistics services.

Partnership management has become a feature and the main component of entrepreneurial culture in the logistics flow. Different forms of partnership are intertwined, functionally combining different forms of cooperation, the main directions of which are:

- cooperation - in the field of action of one function;
- coordination – unity of management of several executive functions;
- Joint activity - in the field of action of one business or business process;

The conditions for establishing and developing partnership relations in the logistics supply chain are:

- system-wide goals, which are understood and shared by all logistics business entities;
- Stable economic ties between cooperating enterprises;
- The aspiration of all participants of the logistics chain to find a compromise of interests at the stages of the junctions and in general throughout the chain of movement of flow processes;
- Correspondence of potential, organizational culture, technological capabilities of interacting partner enterprises;
- joint use of a common information base (including confidential information about the logistics flow), joint logistics activities, projects and initiatives;
- Organizational possibilities of registration of contractual relations of partnership of subjects of the logistics chain.
- Applying of basic strategic directions of organization and management of logistics functions and business processes: diversification, specialization, concentration, differentiation, integration and competition of enterprises in the market of logistics services.

Applying of basic strategic directions of organization and management of logistics functions and business processes: diversification, specialization, concentration, differentiation, integration and competition of enterprises in the market of logistics services.

Diversification is a technique of allocating portfolio resources or capital to a mix of different investments. The ultimate goal of diversification is to reduce the volatility of the portfolio by offsetting losses in one asset class with gains in another asset class. A phrase commonly associated with diversification: “Do not put all your eggs in one basket.”

During pre-pandemic times (2019), aeronautical income typically accounted for 54% of all revenues and non-aeronautical activities for 40%. However, many larger Asian and Middle Eastern airports with high levels of international passenger traffic have more than 50% of their revenues attributed to non-aero revenues prior to the pandemic.

Aeronautical revenue is based on charges levied on passengers, aircraft, security and for terminal rentals, and non-aeronautical income is essentially revenue generated from retail concessions, duty free, car parking, real estate income, and food and beverage, among others. Since airports are businesses in their-own-right, diversifying their portfolio of activities – beyond the provision of

infrastructure to airlines – by offering passengers, customers and local business communities a wide range of services, is a key axiom in this endeavour.

Airlines have traditionally relied heavily on passenger ticket sales, baggage fees, and onboard services as their primary revenue streams. Diversification directions for airlines:

1. Cargo Services. One area of potential revenue growth for airlines is cargo services. During the pandemic, many airlines adapted their operations to focus on cargo transportation, which proved to be a crucial revenue source. As global trade continues to rebound, cargo services present significant growth potential for airlines.
2. Partnerships with Other Industries. Airlines can also explore partnerships with other industries to diversify their revenue streams. For instance, airlines can team up with travel companies, hotels, or car rental services to offer bundled packages that include air travel and other travel-related products. This can help airlines attract new customers and generate revenue beyond traditional ticket sales.
3. Ancillary services, such as in-flight Wi-Fi, seat upgrades, and travel insurance, provide another potential source of revenue for airlines. These services can be offered as add-ons during the booking process or even during the flight itself. By providing customers with more options and greater flexibility, airlines can increase their revenue per passenger.
4. Loyalty programs are an effective way for airlines to generate revenue and improve customer retention. By offering perks, such as priority boarding, free checked bags, and access to exclusive lounges, airlines can incentivize customers to choose their airline over competitors.

Strategies of specialization are focused to develop airport aero-nautical activities. Some could be related to aeronautical infrastructure, while others will aim to increase service levels, or improve the communication or marketing towards clients.

Concerning the airport infrastructure, examples are:

– Increase of the runway capacity by extending the existing runway and/or building a new runway and/or other investments in the airport movement areas (for example taxiways system completion, apron expansion).

– Investment in passenger terminal capacity by building a new terminal, extending existing ones or processing technology improvements.

– Investment in freight terminal capacity by improving technology, building a new terminal or extending existing ones.

– Investment in a low-cost terminal to enable differentiation of the airport service level quality.

Strategies of specialization centered on quality improvement can include:

– Improvement of airport accessibility via bus shuttles, car parking, road and/or rail infrastructure (which often requires financial support from the region, town, etc.).

– Investment in terminal infrastructure to improve the efficiency of aeronautical services (e.g. luggage transfer and passengers flows).

– Development of intermodality with a high-speed rail interconnection (which requires financial support from the country, region, town, etc.

Strategies of specialization are focused to develop airline special passenger or cargo transport activities.

Low-cost carriers (LCCs) are carriers with different practices and resources to the traditional fullservice network legacy carriers which enables them to operate at a lower cost. The LCC business model has been usually characterized by several characteristics associated with productivity efficiencies over the traditional carriers: single aircraft type (usually Airbus 320 or Boeing 737 family), “point-to-point” network instead of a hub-and-spoke network with connecting traffic, lower wage rates, single class cabin, direct sale of tickets instead of using the traditional global distribution channels (GDS), only one-way fare per flight at each point in time, and no seat assignments. The following services must usually be paid for in addition to pass seat: Checked baggage, Allocated seating, In-flight meals and refreshments. Examples of low-cost carriers include Ryanair, EasyJet and AirAsia…

Legacy carriers are often considered the standard of service and amenities. Also referred to as "full-service carriers", legacy carriers tend to offer a more complete and higher-end service than lower-cost carriers. Legacy carriers will be members of airline alliances, operate over an extensive domestic and transoceanic international route structure, offer better cabin service, including meal service and in-flight entertainment, as well as their own airport lounges. Legacy carriers will also offer multiple classes of service (Economy, Business, and a Premium class service), and tend to provide established frequent flyer programs. Legacy carriers will also use a hub and spoke route network, and will typically have a broad and varied fleet with different types of aircraft. However, legacy carriers are changing their structure and their fleet to adapt to the competition that low-cost carriers brought to the industry.

Full-Service Carrier (FSC) also known as 'Full-Service Airline' are airlines that provide one standardized service to the passengers onboard the same cabin class regardless of how much you have paid for your ticket. FSC is referred to the model that an airline is operating in whereas legacy carrier is only a name that is given to the airline.

A concentration strategy involves trying to compete successfully within a single direction. Market penetration, market development, and product development are three methods to grow.

A concentration strategy may consist of only business aviation, or only cargo transportation, or only domestics transportation etc.

Airlines keep evolving their merchandizing in several dimensions: the core product, the personalization of offers, and the flexibility of orders. The core product evolves in many directions: advances in structural materials are enabling more comfortable levels of cabin pressurization and humidity; new kinds of seats are becoming couches, more individualized in-flight experiences are becoming possible with VR, in future, new aircraft could be electric-powered, etc. As the product becomes richer, the offers can be personalized to each customer based on preferences, history and other relevant sources of information. Once the order is confirmed, if the customer requires any changes, it becomes easier to adjust the experience in one click, or even anticipate the needs with an automated travel assistant. This evolution is taking the travel experience to the next level.

In summary the ambition of the "product differentiation" efforts is for airlines to be as creative as they want in terms of developing products that meet customers' expectations, to be able to distribute them through any channels with any partners at the same level of choice and transparency, to provide a high level of servicing, and to ensure that all products are available seamlessly across all travel partners. In addition every customer may be able to receive an offer completely personalized to their preferences, including the form of payment they'd like to use. This product differentiation indeed becomes relevant if airlines know their customers, what they value and are able to offer this value. "Customer-centric" comes with "product differentiation".

IATA's Offer and Order Management standards (NDC, ONE Order) are providing airlines with more options to personalize products and also describe how their products differ from competitors, supporting more choice for consumers. These standards and the airline retailing vision will evolve even further under the direction of IATA's new "Distribution Advisory Council", comprising senior commercial leaders of airlines.

Questions:

1. What is strategy?
2. What is the purpose of strategic planning?
3. What strategies belong to the group of growth strategies?
4. What strategies belong to the group of stabilizing strategies?
5. What strategies belong to the group of reduction strategies?
6. What are main directions of partnership management?
7. What diversification strategies are there for airports?
8. What diversification strategies are there for airlines?
9. What concentration strategies are there for airports?
10. What concentration strategies are there for airlines?

11. What differentiation strategies are there for airports?
12. What differentiation strategies are there for airlines?

Lecture 8. Modern organizational forms of partnership management in logistics chains of air transportation

Contents. Modern trends of vertical integration. Consecutive stages of the formation of a chain of complex logistics services. Twelve stages of partnership formation. Market distribution of risks, powers and responsibilities of logistics network entities. Applying of outsourcing and vertical disintegration. Creation of e-commerce logistics hubs. Applying of forms and methods of management of virtual logistics corporate associations. Development of the functions of a system integrator and coordinator of logistics system entities. Development of international transport infrastructure. Management of the integration of national transport systems and the creation of a single information logistics space, a single global cross-border logistics system.

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Modern trends of vertical integration.

The size and shape of an organization will help determine the strategy and future direction of the company. A major consideration in this strategy is outsourcing or vertical integration.

In relation to aviation manufacturers, there is the consideration that outsourcing specialist tasks saves the business for the expense of rarely used specialist equipment and expertise to organizations that can become more efficient through routine, repetitive LEAN production;

thereby reducing the cost and exposure. However, a vertical integration and in-house management of these same functions gives organizations transparency into any potential risk in supply as well as retain and build intellectual property. The determination in the strategy for originally equipment manufacturers in the aircraft industry comes from an outlook of cost and revenue; however, the long terms effects must be considered in terms of logistics, warehousing, planning, handling and packaging. The ultimate goal is to meet or exceed a customers expectations while remaining viable as a business.

It is important to understand that in the aviation chain of commerce there may be multiple levels and a variance in the definition of a customers. Wholesale organizations and the partnerships that manufacturers establish are often regarded as intermediate customers. Most of the products and services offered by OEM's can be used for personal, business and commercial use. Therefore, the definition of a customer remains broad and customer accommodation must remain nimble in order to remain valid and competitive.

Organizational vertical integration bucks the trend of specialization. Standardization and specialization are mechanisms that can easily be related to LEAN manufacturing philosophies and are the most efficient use of resources. They present that organizations with the ability to standardize their workflow while outsourcing departments and tasks that are not within their repoirtouir. However, the aviation customer base is broad and the highly mobile globalized nature of the business is unique to aviation. In the current supply chain climate, reigning in aspects of the supply chain through vertical integration of raw materials to final delivery of the finished product gives OEM's full transparency on all factors that effect customer accommodation; however, the economics of the business units should be viewed holistically.

In a supply chain, a customer accommodation framework relates to availability, operational performance, and service reliability. Certainly technological developments, the internet of things (IoT) and globalization have meant that customer's expectations of variety as well as delivery have increased, what was once exceptional customer service has become the prevailing norm. Nowadays, customers no longer passively accept their fate in terms of service delivery, but rather they are actively involved in the supply chain process. They can select the quality of the product and decide on delivery type and expediency. In general, and business aviation, the success of the customer is directly proportional to an OEM's performance. The nuances of customer success relate to the manufacture, production and the supply of both aircraft and the parts that are produced support those aircraft.

Although a transaction-cost may determine the direction of supply, maintaining control and predictability on supply is held in high regard in the current climate. Long-terms profit must be examined when considering an outsourcing strategy, the short term transaction-cost economics do not consider quality, transport cost, critical engineering as well as the potential loss of expertise and intellectual property. Relationships can result in profit; however, the degree to which this can be recognized depends on the long-term development of participants within the supply chain to deliver the right quantity of the appropriate products according to a customers demand and the right place and in the right condition.

A more noble goal for shareholder primacy is to add value to customers, while dynamically linking self-managing teams that recognize each other's value as a result of transparency. Mechanisms that offer clear concise regular horizontal communication will inevitably provide a feedback loop to allow continuous improvement and mitigate factors of disaggregation.

Policy options for addressing potential anticompetitive practices in the air transport market fall into two main categories:

Vertical integration with regulation of conduct. The regulated company (the airport) is allowed to operate competitively in competitive (nonregulated) segments, but restrictions are imposed on its conduct as a vertically integrated entity.

Vertical separation. The company that operates in a regulated market segment is not allowed to participate in the competitive segment.

Vertical integration with regulation of conduct

Regulation of conduct can be ex ante or ex post. Ex ante regulation uses two types of instruments: open access and accounting separation.

Open access policies compel the operators of "bottleneck" infrastructure (essential infrastructure such as an airport) to offer access to all firms at reasonable prices. Such policies are aimed at preventing "refusal to deal," but on their own they cannot prevent access discrimination. Operators can effectively discriminate by resorting to factors other than price (such as through quality discrimination).

Accounting separation regulations require vertically integrated companies to separate the accounting of each company under their control. This compels a vertically integrated company to establish a price for each airport service it offers and to use these prices as transfer prices among the companies it controls. The transfer prices must be the same as those the airport operator offers every other airline in the market.

Accounting separation is aimed at preventing price discrimination and cross-subsidies between airport and air transport services. It cannot prevent other kinds of discrimination and must be complemented by open access regulation to prevent restrictions on airport access.

Where only ex post regulations are used, the integrated company (airport operator and airline) will be subject to the general antitrust laws.

To ensure that the antitrust agency can enforce these laws effectively, rules must be established requiring information on the aeronautical services market to be made publicly available.

Consecutive stages of the formation of a chain of complex air logistics services.

Step #1: Request quotes and order your product
Step #2: Understand the impact of airfreight
Step #3: Pack your cargo and book your freight
Step #4: Freight forwarder arranges shipment
Step #5: Goods processed through export customs clearance and placed in transit:
Step #7: Goods are transported from the airport to the buyer

Twelve stages of partnership formation.

The model is divided into 12 phases that extend from the first nascent idea, through the selection of partners to the end of a partnership.

1. Boundary. Understand the challenge: gather information, talk to stakeholders and potential resource providers. Create a vision for the partnership. Why is this partnership necessary and what are its goals.

2. Identification. Identifying potential partners and securing their involvement. Motivate them and encourage cooperation. Explore what types of partners can add value to the partnership. Investigate the possibilities both within your existing network, or also seek out new contacts. Select the most suitable partners and secure their cooperation.

3. Structure. Partners build their collaborative relationship by agreeing on goals, objectives and core principles that underpin their partnerships. Here, a partnership agreement is entered into, which e.g. may contain the following points: Parties to the agreement - who enters into the agreement? Purpose of the assignment. What is the assignment? Audience. Who is the target of the assignment? Organization of the work – where is the task to be completed? Who leads it? How should coordination take place? Is there a steering committee? Distribution of roles between the parties in the project. Who does what? Partner's competences in the area. Regular dialogue meetings between the parties? Objectives for the effort/success criteria. Financial conditions – who pays what? Experience gathering and evaluation – how should it take place? Agreements on termination of cooperation: either a fixed term or an evaluation after e.g. one year.

4. Planning. The partners plan activities and begin to outline a coherent project.

5. Steering. Partners explore the structure and management of their partnership in the medium and long term. You can either choose a person from one of the partner organizations or hire an external person who acts as a guide and leads the partnership.

6. Resource acquisition. The partners (and other supporters) identify and mobilize financial and non-financial resources. Make e.g. resource map of the competences of all involved partners, so that all resources are utilized as best as possible.

7. Implementation. When there is control over resources and agreement about the details of the project, the implementation process begins, where you work based on an agreed schedule and (ideally) against specific initiatives. Make sure that one person has an overview of the delivery process, so that this does not disappear in the day-to-day tasks of the parties.

8. Measurement. Results and impact are measured and reported based on the agreements that have been previously concluded. Does the partnership achieve its goals? Is there anything that needs to be changed?

9. Assessment. What impact does the partnership have on the partner organisations? Is it time for partners to leave the collaboration and / or new ones to enter?

10. Revision. Reconsidering partnership, program(s) or projects based on experiences.

11. Institutionalization. Building appropriate structures and mechanisms for the partnership, which in the long term ensures commitment and continuity.

12. Maintenance or Termination. Partners create sustainability or agree on a suitable end. Four possible scenarios: Individual partners leave the partnership and their place is taken over by others. The partnership is dissolved and responsibility for the project is left to one of the parties. The partnership is dissolved and a new organization is formed. The partnership ends. The partnership was temporary and will be terminated as planned or could not meet its objectives and will therefore be terminated.

Market distribution of risks, powers and responsibilities of air logistics network entities.

The main types of risks faced by the supply chain of airlines

1. Risk of fuel price fluctuation. Airline operations are directly affected by fluctuating fuel prices because fuel is an essential element of flight. Fluctuations in prices have a direct impact on operating costs and profits.

2. Risks of natural disasters and weather conditions. Weather conditions and natural disasters (such as storms, typhoons, earthquakes, etc.) can cause flight delays, cancellations or route adjustments that impact airline operations negatively.

3. Risk of supplier issues. Airlines rely on suppliers for a variety of equipment, parts and services. If suppliers fail to deliver on time or the quality of their products is not up to standard, it will affect aircraft maintenance, spare parts supply and service quality.

4. Risk of passenger demand uncertainty. Due to the uncertainty of passenger demand, it is difficult for airlines to predict the market demand accurately, which may lead to the situation of excess or short supply of seats, affecting operational plans.

5. Risk of political and economic instability. Changes in the political and economic environment may lead to problems such as declining demand in the aviation market, route restrictions, currency fluctuations and other issues, posing challenges to the operations of airlines.

6. Security and terrorism risks. The aviation industry is affected by security and terrorist threats. Terrorist attacks, security breaches, and illegal acts can lead to flight cancellations, airport closures, and passenger safety concerns; These risk types form only a part of an airline's supply chain, and to address these risks and reduce their negative impact on their business, airlines need to develop effective risk management strategies

The Significance of Risk Management in Aviation Supply Chain:

Safety and Compliance. Safety is paramount in aviation, and regulatory authorities impose stringent standards to ensure it. Any interruption or inconsistency in the supply chain can lead to non-compliance, putting both lives and reputations at risk. Managing risk effectively is essential to maintain the highest safety standards.

Cost Containment. Supply chain disruptions can be costly. Airlines and maintenance providers rely on just-in-time inventory systems to minimize expenses, making any supply chain disturbance

a financial burden. Effective risk management helps control costs by ensuring the timely availability of critical parts and materials.

Reputation. Protection In the age of instant communication, reputation is fragile. A supply chain failure leading to flight cancellations or delays can damage an airline's reputation and lead to a loss of trust among customers. Managing risk is about safeguarding not just operational efficiency but also brand value.

Strategies for Managing Risk in the Aviation Supply Chain:

Diversification of Suppliers. Relying on a single supplier for critical components is a risky proposition. Aviation companies should diversify their supplier base, working with multiple suppliers capable of producing or delivering essential parts and materials. This minimizes the impact of disruptions from a single source.

Supply Chain Visibility. To effectively manage risk, aviation companies need full visibility into their supply chain. Modern technology and data analytics tools can provide real-time tracking of shipments, inventory levels, and supplier performance. This visibility allows for proactive risk mitigation.

Contingency Planning. Every aviation company should have a comprehensive contingency plan in place. This plan should outline responses to various scenarios, such as supplier bankruptcies, natural disasters, or geopolitical tensions. Regular drills and updates ensure readiness in the face of unexpected events.

Collaborative Relationships. Building strong relationships with suppliers goes beyond transactional interactions. Collaborative partnerships involve open communication, shared risk assessments, and joint problem-solving. Such relationships foster trust and enhance resilience in the supply chain.

Advanced Technology Adoption. Leveraging advanced technologies like blockchain, AI, and IoT can significantly improve supply chain risk management. Blockchain, for instance, can enhance transparency and traceability, while AI can predict potential disruptions and recommend preventive measures.

Continuous Monitoring and Auditing. Regularly monitoring supplier performance and conducting audits are essential components of risk management. These activities help identify early warning signs and ensure that suppliers are meeting quality and safety standards.

Applying of outsourcing and vertical disintegration.

Vertical integration refers to a company's ownership of its supply chain, including the production, distribution, and retail aspects of its products or services. On the other hand, outsourcing involves contracting with a third-party company to perform certain tasks or functions, often those that are not part of the core business. Vertical integration aims to bring more of the production process in-house, while outsourcing aims to delegate certain tasks to external parties.

Functions Likely to be Outsourced by Airlines:

Very Likely: Ticket Sales and Distribution. Aircraft Leasing. Airport Gates. Complimentary Limousine Pick-Up. Food Services. Ticketing. Baggage Handlers. Aircraft Interior Cleaning.

Likely: Engine Overhaul or Rework. Maintenance Training. Information Systems and Technology. Pilot Training. Advertising.

Moderate: Counter personnel. Airframe Maintenance. Spare Parts Inventory. Feeder Operations. Gate Personnel. C and D Level Maintenance Checks.

Unlikely: Cargo Handling and Operations. Marketing. Human Resources Management and Recruitment.

Very Unlikely: Pilots. Strategic Management. Flight Attendants. Accounting. Routine Hanger Maintenance.

Creation of e-commerce logistics hubs.

Logistics Hub and Warehouse are not the same. The added space – usually 10 – 50X bigger than any individual warehouse – and capabilities in a Logistics Hub create a more advanced type of

transportation infrastructure. That does not preclude, however, a network of warehouses from becoming a Logistics Hub in the future

Often Logistics Hubs are owned by a small group of companies, and then leased out to other companies for the space; only large companies can buy their own Logistics Hub

Software is moving to the core of the Logistics Hub model; new nodes in a network can now be created, leading to new models of Logistics Hubs

Amazon can serve as a reference business model to analyze the structure of a Logistics Hub model, especially given their shipping expertise and the ability to accurately predict demand

Automation is the obvious current Trend around Logistics Hubs, but decentralization is the Future Trend. When the novelty of "on-demand" starts to become the expected, a new demand curves towards the unexpected begins to take hold

Ethiopian Airlines Cargo launched a sorting and distribution terminal for e-commerce shipments and mail services. The newly built facility is aimed at bridging logistical gaps and positioning Addis Ababa as the cross-border e-commerce logistics hub for the African continent and beyond. The building is equipped with state-of-the art technology and meticulously implemented systems. As a result, the facility will offer a variety of services including consolidation, deconsolidation, sortation, repacking, labeling and more. Customers can now track and trace their shipments effortlessly from anywhere.

Applying of forms and methods of management of virtual logistics corporate associations.

Unlike a traditional team, a virtual logistics team is made up of logistics planners who can perform their job remotely. They still fulfill all of the roles that are generally assigned to a traditional logistics planner, with the exception of being tied down to a single warehouse.

Virtual organizations operate in the e-commerce realm with fully electronic business structures. These organizations uses online applications to provide services, with the least amount of physical office space required. Amazon.com and eBay are both cited as examples of popular online organizations.

A Virtual Supply Chain (VSC) is the informational representation or data visualization of the organization's physical supply chain network. This includes, though is not limited to manufacturing plants, warehouses along with the supply chain components of the extended enterprise viz. customers, suppliers, logistics providers and so on. Just as a virtual model of an architect's drawing allows the construction and client teams to walk through a design, a VSC allows the supply chain planners an overall view of the operations with the ability to zoom in on various areas of interest.

All entities in the VSC will have access to a single version of the truth in real-time. This leads to more effective communication and coordination:

Agility. Deviations and disruptions can be flagged. Corrective actions can be taken promptly.

Flexibility. Companies constantly need to tweak their strategies leading to changes in business processes. They could be acquiring new companies, targeting new markets, launching new products or switching to a 3PL or 4PL provider. Companies need to have systems which are flexible enough and keep up with the rate of change.

Customer centricity. The rise of customer-centric paradigms such as on-demand personalized manufacturing, Omni-channels, faster last mile delivery requirements, etc. has caused companies to need an enabler. The VSC can help attain customer satisfaction targets.

Business Intelligence. Data is no longer just a byproduct of business processes. It has become an important asset. The intelligence gleaned from VSC can highlight inefficient processes, unviable products or sub-optimal routes.

Adaptive to new technology. The digitization of the supply chain industry is occurring at a steady pace. It will be easier to add and integrate new applications to the VSC as and when new technologies such as IoT, Blockchain, AI, etc. gradually mature.

Simulations. The VSC also provides the ability to run simulations in order to chart the optimum course.

Implementation of a VSC. The three necessary components of implementation are –

An overarching project such as this needs senior management to champion the cause. The vision and momentum for the implementation must come from the top.

Next, the implementation must have the buy-in and active involvement of the IT department, the supply chain team, and the company's customers & suppliers.

Finally, the capability of the company's IT consulting vendor is extremely important. Only a vendor experienced in VSC's implementations can be the catalyst for change.

Development of the functions of a system integrator and coordinator of logistics system entities.

Leading, managing, and holding people accountable are some of the primary functions of an Integrator. They serve as the steady force behind the organization and drive clarity and communication throughout logistics system.

Integrators own operating system of supply chain, or the way logistics chain functions. They perform the functions outlined above as a part of their day-to-day roles, facilitate relationships with the members of the team o different players (supplier, carrier, customs, etc), and goal completion for the logistics system entire.

Development of international transport infrastructure.

Transport is vital to the well-functioning of economic activities and a key to ensuring social well-being and cohesion of populations. Transport ensures everyday mobility of people and is crucial to the production and distribution of goods. Adequate infrastructure is a fundamental precondition for transport systems. In their endeavour to facilitate transport, however, decision-makers in governments and international organizations face difficult challenges. These include the existence of physical barriers or hindrances, such as insufficient or inadequate transport infrastructures, bottlenecks and missing links, as well as lack of funds to remove them. Solving these problems is not an easy task. It requires action on the part of the governments concerned, actions that are coordinated with other governments at international level.

Infrastructure is a complex field with so many different components under it; but all of them can be categorized into two main types of infrastructures. They are the hard and the soft infrastructure.

Hard Infrastructure refers to the physical network that keeps an industrialized nation smoothly functional. Among the components that are classified under the hard infrastructure are the capital assets like the utilities, transport vehicles, telecommunication systems, roads, highways, railways, subways, traffic lights and street lights, dams, walls and culverts, drainage systems, the airports and bus terminals, and bridges, among others.

The soft infrastructure, on the other hand, is the framework required to keep and maintain the different institutions. This can also include both the physical and the non-physical assets. Examples of physical assets are the buildings that house the network and the equipment used to maintain the institution. For non-physical assets, this includes the software and programs, the governing rules and regulations, the financial system, and the organizational structure. In essence, the soft infrastructure embodies the system of delivery of services to the people.

The logistics infrastructure within such meaning of the concept comprises:

- warehousing infrastructure, including: buildings and premises, storage yards, warehouse equipment,
- the so-called handling infrastructure, including: internal transport, auxiliary equipment for commodity handling,
- transport infrastructure,
- transport packaging infrastructure: marked with a code, not marked with a code,
- IT infrastructure, including: hardware, software, orga-technical means, and equipment for telecommunication purposes

Management of the integration of national transport systems and the creation of a single information logistics space, a single global cross-border logistics system

Ukraine has a network of over 200,000 kilometres of roads. In 2021, 41% of cargo (in tonnes) and 20% of volume (in tonne-kilometres) was transported by road – a big part of that being 'last mile' cargo (heavy freight, agricultural products and perishable goods) transported over relatively short distances by road. Lorries are also frequently used to deliver agricultural products to the ports and to import highvalue products (electronics, appliances, apparel, etc.) from the EU. Road density in Ukraine is about a third of the road density in Europe, if measured by population; and a quarter, if measured by area.

The network of railways in Ukraine (excluding the temporarily occupied territories before the full scale war) amounts to 19,800 km, of which 47% are electrified. The density of railways in Ukraine even exceeds the density in Europe (496.27 km per million inhabitants vs. 429.97 km). The railway system connects major cities, towns and border crossing points with neighboring countries, and is used for transporting both cargo and passengers. Before the war, the railways were used primarily to transport metal, coal, iron ore and construction materials, as well as passengers.

Ukraine has 19 airports, which equates to 0.37 airports per million inhabitants – a third of the EU figure (0.95 airports per million inhabitants). Before the airspace closure due to the war, 21 passenger airlines and 19 airlines carrying mail and cargo operated on the market, serving 16.2 million passengers in 2021.

Ukraine has 18 seaports, 13 of which are located on the continental territory of Ukraine; the other five are in the temporarily occupied territory of the Autonomous Republic of Crimea. Seaports are critical for the country's economy, given that more than half of Ukraine's total exports is transported through sea corridors – agricultural exports (90% of grain exports used to be shipped by sea), as well as exports of metals, chemicals and fertilisers.

The inland waterways of Ukraine are 6,200 km in length, with the Dnieper, Desna, Pripyat, Danube and Southern Bug the main navigable rivers. The country has 38.18 km of waterways and 9.34 harbours per million inhabitants – noticeably less than Europe (91.17 km of waterways and 25.39 harbours per million inhabitants).

According to the World Bank's logistics performance index, in terms of transport infrastructure quality Ukraine lags behind almost every European country (apart from Moldova). The most outdated infrastructure has been in the railway sector, as it is the most expensive to modernise. Certain railway stations, routes and indeed locomotives are in a critical condition. Another issue has been the poor state and low capacity of border checkpoints. There has been a lack of funding to improve and maintain the transport infrastructure: this has had repercussions for the safety of travellers and goods and has reduced the overall efficiency of the transport system. The rising popularity of private cars and the underdeveloped public transport in cities have led to heavy congestion on urban roads, a shortage of parking, increased air pollution, a greater frequency of road accidents and higher levels of stress for commuters (Merforth, 2014). Ukraine has a higher rate of road traffic fatalities than its peers, with the death rate among pedestrians especially high.

As of February 2023, total damage was estimated at USD 35.7 billion (17.8% of 2021 GDP). The Russian Federation's aggression had led to the destruction of 25,000 km of roads and 344 bridges and overpasses. The greatest share of the losses was in Donetsk (26%), Kherson (15%), Luhansk (15%) and Zaporizhzhia (14%) regions.4 Those are the regions that were occupied by Russia or that experienced protracted positional fighting. The railway system was also affected, with 507 km of track and 126 stations damaged. The greatest destruction was witnessed in Donetsk (36% of total rail infrastructure damage) and Zaporizhzhia (23%) regions. As of February 2023, 19 civilian airports had been damaged, with the runway destroyed at 12 of them.

A modern and efficient transport system is crucial for the post-war economic recovery of Ukraine, as it is a prerequisite for building a highly competitive, export-oriented manufacturing and agricultural sector. Among the main goals of the reconstruction should be increasing the

quality and capacity of roads, modernising the rail network, upgrading the ports and developing inland waterways. To ensure that the 'Build Back Better' approach is realised, we believe the reconstruction programme in the transportation sector should adhere to the following principles:

Multimodality: To optimise the transportation sector, Ukraine should develop a multimodal transportation system, allowing for the rapid transfer of goods from one mode of transport to another, such as by means of containers. This will require the construction of multimodal terminals in the western and southern regions of Ukraine, which will serve as integrated transport and logistics centres and will offer customs services. The terminals should also include connections between railway and water transport, in order to encourage the development of inland waterways and redirect some freight traffic from the roads onto the water. Multimodal transportation should also be implemented in passenger transport, with the construction of multimodal stations to provide comfortable and convenient transfers. Additionally, the reconstruction of the rail infrastructure should include electrification for high-speed connections.

Flexibility: To overcome the challenges thrown up by the war, Ukraine's transport system must be adaptable and able to withstand potential damage. As well as making repairs to damaged infrastructure, alternative land transportation routes should be established to resolve bottlenecks. New logistics centres and border crossings with the EU are needed to increase trans-shipment capacity and to comply with interoperability. The seaport infrastructure should be modernised and improved. As road transport has started to play an increasingly important role in Ukraine's international trade (in the wake of the partial closure of sea routes), the development of road infrastructure – border crossing points, inspection points for agricultural products, parking for trucks and accommodation for drivers, storage terminals – has become a priority.

Connectivity: The railway gauge employed in Ukraine is different from the gauge in use across most of the EU, and this presents a huge obstacle to interoperability. Migrating its railway lines to the European standard track gauge should be a priority for Ukraine. In the long term, Ukraine should consider building railways with the European track width to connect major Ukrainian cities

Sustainable urban mobility: According to the EU's Guidelines for Developing and Implementing a Sustainable Urban Mobility Plan (Rupprecht Consult, 2019), a shift towards sustainable mobility requires a strategic and integrated approach to deal effectively with the complexities of urban transport across different modes. The general aim of strategic planning for urban mobility is to improve its accessibility and quality and ensure its sustainability, balancing that with the need for economic viability, social equity, health and environmental quality.

Considering modes of transport individually, Ukraine and the EU should prioritise the following:

Roads: Currently, the regulation of motor transport in Ukraine and the EU is fairly similar, as Ukraine and the EU/EU member states are parties to multiple agreements in this field and have incorporated these requirements into their national legislation. However, some differences still need to be addressed before full liberalisation of road transport between Ukraine and the EU can occur. This includes Ukraine's commitment to ensuring compliance with the rules on transportation safety, driver training and qualifications, working hours and the installation of tachographs.

Railways: Ukraine needs to align its legislation with those EU norms related to market access and infrastructure, technical conditions and safety. The country is expected to implement seven EU directives and four regulations: these cover rules on the development of railways, the licensing of rail companies, capacity requirements for railway infrastructure, railway safety, the certification of workers and railway infrastructure, the interoperability of rail infrastructure, common rules on combined freight transportation, competitive freight, standardisation of the financial statements of rail companies, public passenger traffic, and the rights and obligations of passengers.

Air: The process of bringing Ukraine's legislation in the field of civil aviation into line with the Common Aviation Area (CAA) Agreement is designed to be implemented in two stages, with a first transition period allowing for limited market access and a second transition period allowing full market access and recognition of Ukraine-issued certificates. A Joint Committee consisting of representatives from Ukraine and the EU will oversee the implementation and interpretation of the

agreement. Additionally, Ukraine will participate as an observer in the work of the European Union Aviation Safety Agency (EASA) and the Single Sky Committee and will be accountable to EASA for aircraft certification. The second transition period of the CAA Agreement will involve implementation of EU regulations and standards on primary airworthiness, on maintaining airworthiness and on maintenance of aircraft and their components, and will see convergence of the Ukrainian and EU certification systems. During this period, Ukraine will also have to implement those EU regulations related to free access to the air transportation market, air transport management, the granting of licences for air traffic inspectors, provisions relating to aviation security and the environment, and social aspects. This period will also require monitoring and evaluation of the implementation of these regulations by the EU and Ukraine. Completion of the second transition period will result in the complete application of the CAA Agreement and its benefits.

Maritime and internal waterways: In order to gain access to the EU internal market for maritime transport services, Ukraine must align its legislation on marine safety, technical and operational rules, seafarer qualifications and social protection with EU norms. It must also align its legislation on inland waterway transport with EU norms, including market access and infrastructure, technical conditions and safety. This includes implementing six EU directives, such as Council Directive No. 96/75/EC on the functioning of the transportation market, Council Directive No. 87/540/EEC on access to the transportation market and Directive 2006/87/EC on transport safety. The agreement sets a five-year deadline for Ukraine to bring its legislation into line with EU standards omitting cabotage regulations.

Questions

1. What vertical integration trends do you know?
2. What are stages of the formation of a chain of complex air logistics services?
3. What are twelve stages of partnership formation?
4. What are the main types of risks faced by the supply chain of airlines?
5. What components of risk management in the aviation supply chain do you know?
6. What functions are airlines likely to outsource?
7. What are the functions of e-commerce aviation logistics hubs?
8. What is a virtual supply chain?
9. What is hard transport infrastructure?
10. What is soft transport infrastructure?
11. What are the challenges in the development of transport aviation infrastructure in Ukraine?

Lecture 9. Cluster strategy of airport-hubs in the system of regulation of air transportation of chains

Contents. Prerequisites and expediency of the geo-economic stage of strategic management of the development of transport activities. The transport and logistics cluster of airports as a modern form of air transport organization at the national and international levels. Basic concepts of clustering. Cluster according to M. Porter. Classification of clusters. The dual character of the concept of logistics clustering in air transport. Formation of transport and logistics clusters and their cores. Formation of horizontal functional integration of economic entities. A set of business enterprises: logistics centers, adjacent support and service companies as an informal association, functioning on the basis of the “4C” criteria: 1) concentration within the territory and industry, 2) competition in the fight for the market of consumers of services of the business environment of the cluster, 3) cooperation in ensuring the complexity and efficiency of logistics services in the air transportation system, 4) competitiveness in the quality of services and interaction of the subjects of the logistics chain of air transportation.

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Prerequisites and expediency of the geo-economic stage of strategic management of the development of transport activities.

For import and export activities, companies are using the air mode too. In this scenario, strategic planning and logistic choices of SMEs need to be based on an accurate consideration of geo-economic changes and emergent players in the air logistics. Improving transport connectivity is one of the major elements to increasing economic growth in a country. The development of civil air transport connectivity contributes to a country's economic growth through creating jobs, promoting trade, and stimulating tourism. Air transport plays a particularly important social and economic role particularly in remote areas. Its development will help countries to diversify their economies and lead to increased and sustainable growth.

Air transport also supports international tourism. In particular, air transport policy and the presence of low-cost carriers can significantly increase international arrivals to tourism destinations.

The transport and logistics cluster of airports as a modern form of air transport organization at the national and international levels.

To improve the management of state assets in the aviation infrastructure, it was expedient to create networks of aviation transport and logistics clusters. Transport and logistics clusters are naturally interconnected and interdependent parts of the logistics system with the key status of a transport intermediary, which carries out interorganizational coordination and provides a synergistic effect. The use of the key status of transport intermediary by Boryspil International Airport in the creation of a multimodal transport and logistics cluster will increase its competitiveness as a leading hub airport in Eastern Europe. In particular, it can be done by expanding the network of air connections, attracting more air carriers, creating passenger, freight and logistics infrastructure complexes with rail, road, air and water transport at hub railway stations, ports and airports with inter-organizational coordination of leading airports.

The network of aviation transport and logistics clusters is considered as a basis for productive cooperation of partners with a balance of conflict of interests. Advantages of membership in aviation transport and logistics clusters: reducing the risk of loss; the possibility of using best practices; joint creation, implementation of innovations and new initiatives; fastest contacts; high level of partners trust; a tool for counteracting crisis phenomena; the fastest possible interaction with local authorities to agree on priorities for action to reduce the impact of negative economic trends; effective balancing of priorities in the field of transport services; leadership in supporting and stimulating the economy of the regions and the transport industry; better coordination, communication and cooperation of participants and curators – partners of cluster development; quick adaptation to changes.

Basic concepts of clustering. A cluster is a compact structure when integrity and complexity, the presence of connections, organization, and emergent properties are its properties. The internal

structure of the cluster is a stable arrangement in space and time of its elements and connections, it determines the functional composition of the cluster and its interaction with the external environment.

The structure of the cluster is determined by the formulated goal. At the highest time point of its successful functioning, the structure of the transport cluster is a stable unity of elements, relations of groups and classes, and integrity of the system. In a well-structured cluster that has been quantitatively formed, the interactions of structural classes are coordinated, synchronized and aimed at achieving a general effect. The potential of the cluster according to the efficiency parameter is greater than the sum of the potentials of all constituent classes and groups. Based on the results of cluster studies, it is possible to create the following structure of a transport cluster. The specialization of such a cluster is formed on the basis of the types of transport that are already developed in this region and from cooperation at the international level.

Cluster according to M. Porter.

Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions—such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations—that provide specialized training, education, information, research, and technical support.

Today's economic map of the world is characterized by what Porter calls clusters: critical masses in one place of linked industries and institutions—from suppliers to universities to government agencies—that enjoy unusual competitive success in a particular field. The most famous examples are found in Silicon Valley and Hollywood, but clusters dot the world's landscape. Porter explains how clusters affect competition in three broad ways: first, by increasing the productivity of companies based in the area; second, by driving the direction and pace of innovation; and third, by stimulating the formation of new businesses within the cluster. Geographic, cultural, and institutional proximity provides companies with special access, closer relationships, better information, powerful incentives, and other advantages that are difficult to tap from a distance. The more complex, knowledge-based, and dynamic the world economy becomes, the more this is true. Competitive advantage lies increasingly in local things—knowledge, relationships, and motivation—that distant rivals cannot replicate.

Classification of clusters.

Most economists believe that there are four compositions of clusters which can be identified:

Geographical cluster – a cluster of businesses in a geographical location where enough resources have accumulated to give a competitive advantage to businesses in a given economic branch e.g. the California wine cluster or the flower cluster in the Netherlands.

Sectoral clusters - a cluster of businesses operating together from within the same economic sector e.g. Silicon Valley

Horizontal cluster - are built between businesses that compete for the same market, e.g. multiple producers combing to establish a retail shop

Vertical cluster - are alliances between businesses which belong to different levels of the same supply chain, such as a buyer assisting its suppliers in upgrading.

The dual character of the concept of logistics clustering in air transport.

The network of aviation transport and logistics clusters has the opportunity to develop multimodal transportation, provide high-speed land transport by various modes of public transport between airports and settlements, create logistics centers and simplify formalities, reduce the

negative impact of vehicles on the environment through the introduction of new technologies and with priorities defined by the standards and recommended practices of the International Civil Aviation Organization (ICAO) and the requirements of Eurocontrol.

To create favorable conditions for the development of an effective competitive multimodal national transport system in Ukraine, it is necessary to use a comprehensive approach to the reconstruction of airports. Taking into account the requirements of European regulations on the certification of civil aerodromes for the unrestricted acceptance of aircraft by airports, there is a need for reconstruction with the provision of category I or II instrument landing system (ILS) and 7th category of fire protection with appropriate equipment and ground equipment.

Formation of transport and logistics clusters and their cores.

The concepts of logistics clusters enable to achieve the assumed logistic goals thanks to some adopted solutions: • minimizing costs at an assumed level of customer service, • increasing the quality of customer service at a given level of costs.

Participation in cluster initiatives allows cluster participants to achieve benefits synergy of logistical goals. Higher production capacity and involvement of specialized, innovative potential favors the reduction of unit logistic costs, allowing at the same time to improve customer service by providing customers with better quality and availability of goods and services. Convenient location and infrastructure facilities which support the centralization of logistics and transport companies in a region may initiate the formation of logistics clusters. In this case, the construction of a logistics system is primary in nature and functioning system must be designed to support global streams of goods and the task of this system will be to prepare adequate capacity and at the same time provide an attractive price and service quality. A logistics cluster, while performing its tasks, will use both transport and logistics facilities as well as benefits of cooperation in a group of other entities. An innovative and future-oriented concept of clusters combined with a modern logistic system which assumes minimization of costs and strategies focused on time, quality and innovation, contributes to the formation of clusters that are strictly logistics clusters.

Formation of horizontal functional integration of economic entities.

Horizontal integration involves acquiring entities that perform a similar function either as a process of consolidation or for market penetration. A airport authority is a good example of a vertically integrated structure that provides a wide array of services connecting the foreland and the hinterland.

A set of business enterprises: logistics centers, adjacent support and service companies as an informal association, functioning on the basis of the “4C” criteria: 1) concentration within the territory and industry, 2) competition in the fight for the market of consumers of services of the business environment of the cluster, 3) cooperation in ensuring the complexity and efficiency of logistics services in the air transportation system, 4) competitiveness in the quality of services and interaction of the subjects of the logistics chain of air transportation.

Questions

What is the influence of the geo-economic indicator on the strategic management of transport activities?

What is the advantage of using transport and logistics clusters of airports in Ukraine?

What is a cluster?

What is a cluster by M. Porter?

What is a transport and logistics cluster?

What is the classification of clusters?

What are the goals of logistics clusters?

Lecture 10. Regulation of international air transport

Contents. Peculiarities of control, regulation and management systems in air transport. The structure, legal framework of the bodies carrying out the regulatory process at the national, regional and international levels. ICAO standards, regulations, rules and other instructional materials on the regulation of air transport activities. Categories of air transport markets: between a pair of cities, between a pair of states, interregional, intercontinental and worldwide air markets. Peculiarities of legislation on open competition.

List of reference:

Manual on the regulation of international air transport (Doc 9626). Current edition.
ICAO URL: https://www.icao.int/Pages/default.aspx

Peculiarities of control, regulation and management systems in air transport. The structure, legal framework of the bodies carrying out the regulatory process at the national, regional and international levels

Regulation is the giving of authoritative direction to bring about and maintain a desired degree of order. All regulation involves regulatory process, various patterns of activity by people interacting to establish and maintain some desired result for the subject or entities being regulated. Similarly, all regulation involves regulatory structure, i.e. the organizations or other entities involved and the legal framework (such as licences, regulations and agreements). Finally, all regulation involves regulatory content, the particular subjects being regulated (such as market access, pricing and capacity).

The process and structure of international air transport regulation have three distinct venues — national, bilateral and multilateral.

National regulation of air transport is regulation undertaken by a State within its territory in its exercise of sovereignty over that territory and the airspace above it. Thus national regulation extends to both domestic and international air services and to both national and foreign air carriers. The national regulation of international air services must take into account the State's international obligations pursuant to bilateral and multilateral agreements and arrangements and should give due regard to the actions and concerns of other States.

The process of national regulation of air transport services has three basic components:

- legislative (i.e. the making of laws, policies, rules and regulations);
- licensing (i.e. the granting, conditioning, denying or withholding of permission to conduct air transport services on a continuous or long-term basis); and
- ad hoc authorization (i.e. the granting, conditioning, denying or withholding of permission for individual tariffs, flights, etc.);
- each of which are complemented by enforcement actions taken if and when required.

Bilateral regulation is regulation undertaken jointly by two parties, most typically by two States, although one or both parties might also be a group of States, a supra-State (i.e. a community or other union of States acting as a single body under authority granted to it by its member States), a regional governmental body or even two airlines (for example, in the determination of capacity or prices).

Multilateral regulation is regulation undertaken jointly by three or more States, within the framework of an international organization and/or a multilateral treaty or agreement, or as a separate specific activity, and may be broadly construed to include relevant regulatory processes and structures, outcomes or output written as treaties or other agreements, resolutions, decisions, directives, or regulations, as well as the observations, conclusions, guidance and discussions of multinational bodies, both intergovernmental and non-governmental.

The International Civil Aviation Organization (ICAO) is the worldwide intergovernmental organization created by the Convention on International Civil Aviation signed at Chicago on 7 December 1944 to promote the safe and orderly development of international civil aviation throughout the world.

Apart from intergovernmental organizations, there exist numerous worldwide, regional and trans-regional non-governmental organizations. Some of these organizations, from time to time, or in some cases on a recurring basis, seek to influence the governmental regulation of international air transport directly or indirectly. Many typically do so by aggregating the commonly held views of their members on matters relating to international air transport and articulating such views, publicly and/or through communications with (and participation in various meetings of) governmental and intergovernmental bodies. Others undertake or sponsor studies which can inform or influence those conducting international air transport regulation. Their degree of focus on air transport issues, as distinct from other issues, varies by organization.

ICAO standards, regulations, rules and other instructional materials on the regulation of air transport activities.

The establishment and maintenance of international Standards and Recommended Practices (SARPs), as well as Procedures for Air Navigation (PANS), are fundamental tenets of the Convention on International Civil Aviation (Chicago Convention) and a core aspect of ICAO's mission and role.

SARPs and PANS are critical to ICAO Member States and other stakeholders, given that they provide the fundamental basis for harmonized global aviation safety and efficiency in the air and on the ground, the worldwide standardization of functional and performance requirements of air navigation facilities and services, and the orderly development of air transport.

Today, ICAO manages over 12,000 SARPs across the 19 Annexes and six PANS to the Convention, many of which are constantly evolving in concert with latest developments and innovations.

The development of SARPs and PANS follows a structured, transparent and multi-staged process – often known as the ICAO "amendment process" or "standards-making process" – involving a number of technical and non-technical bodies which are either within the Organization or closely associated with ICAO.

Typically, it takes approximately two years for an initial proposal for a new or improved Standard, Recommended Practice or procedure to be formally adopted or approved for inclusion in an Annex or a PANS. Occasionally, this timescale can be expanded or compressed depending on the nature and priority of the proposal under consideration.

Categories of air transport markets.

In commercial aviation, a city pair is defined as a pair of departure (origin) and arrival (destination) airport codes on a flight itinerary. A given city pair may be a single non-stop flight segment, a direct flight with one or more stops, or an itinerary with connecting flights (multiple segments).

Air services can be classified by the geographical areas they serve, for example:

- a domestic air service, i.e. an air service operated wholly within the territory of a State;
- an international air service, i.e. an air service that passes through the airspace over the territory of more than one State;
- a regional air service, i.e. either an air service offered on routes serving smaller cities within a region or between regions of a State; or an air service offered on secondary routes serving smaller cities in a regional area involving the territories of more than one State;
- a cross-border service, i.e. an international short-haul air service operating across the borders of two contiguous States.

Peculiarities of legislation on open competition.

The legislative component of the process of national regulation has three elements: law-making, policy-making and the writing of rules and regulations. Each element of the process is likely to differ from the others and to vary from State to State according to its particular legislative system, governmental structure and customary practices. In general, however, the law-making element

tends to come into use least often and be employed for establishing laws and fundamental policies. Once enacted, such laws are usually changed only when issues of far-reaching significance are involved. The details of implementation are typically left to the rule-making process.

The licensing component of the process of national regulation involves the consideration of and action upon applications received from national and foreign air carriers for authority to provide commercial air services on a continuous basis and for extended periods of time (for example, scheduled services on a specified route or routes). In addition to licensing national and foreign air carriers, air transport authorities may also engage in licensing certain intermediaries in air transportation such as tour organizers, freight forwarders or travel agents.

The criteria used in licensing a national carrier vary from State to State but generally include:

- a national ownership and control requirement;
- proof of the applicant carrier's fitness, i.e. its financial health, its willingness to provide the proposed services and its ability to meet established operational and safety standards; and
- a finding that granting the authority will be in the public interest.

Rules of negotiations, consultations, coordination and conclusion of agreements, regulation and resolution of conflicts on terms of mutual benefits, liberalization, respect and courtesy.

The basic process of bilateral regulation is that of consultation, the communication and interaction between two parties, typically but not always two States, carried out over a period of time to question or inform, to establish or change a relationship or to resolve a dispute between them. The term consultation (or consultations) is applied to a broad range of such bilateral communications and interactions.

Formal consultation typically involves meetings of multi-person delegations led by designated chairpersons, each having appropriate delegated powers.

Informal consultation, on the other hand, may involve solely written, solely oral, or a combination of written and oral communication. It can take place in meetings between only two or a few persons (for example, an embassy attaché of one State and a civil aviation official of the host State) at which a paper or papers may be provided or exchanged. Alternatively, it may occur by telephone, by electronic transmission of a message or, more traditionally, by the sending and receiving of an official document, usually through diplomatic channels.

A negotiation is a consultation, usually a formal one, which has become (or which, from the beginning, was intended to be) a process of bargaining between the parties. Thus, although all negotiations are also consultations, not all consultations are negotiations.

Greater commercial freedom allows airlines to improve productivity and efficiency. Liberalisation can create the freedom for airlines to operate on a fully commercial basis. This will allow them to allocate capital more efficiently, to respond better to changes in demand in markets and to improve productivity.

Further airline liberalisation can provide significant benefits for consumers. Experience in the other industries shows that liberalisation can:

- Lower Prices.
- Increase Output and Choice.
- Improve service quality.

The stepwise liberalisation of the EU internal aviation market resulted in 1993 in an open internal market that generated a series of supply side responses, which are partly comparable with the changes demonstrated in the deregulated US domestic air transport market.

Regulatory actions

States will continue to issue operating permits for commercial air transport operations in accordance with their national regulations.

Unlike the licensing component which deals with relatively general and longer-term authorizations for air services, the ad hoc authorization component of the process of national regulation primarily involves making day-to-day decisions regarding specific matters, such as

permitting a single flight or a series of non-scheduled flights or approving or disapproving a particular tariff or schedule filing. This process could have some or all of the following phases:

• a fact-finding or information-gathering phase (often the initial responsibility of the applicant) which includes assembly of the basic elements necessary to reach a decision, i.e. an adequate description of the approval being sought; the relevant international rights and obligations; the applicable national laws, policy, rules and regulations; relevant precedents; and views of interested parties;

• an analysis phase which includes examination of the gathered information and the production of options for the decision-maker with a rationale for each, including the advantages and disadvantages of each option;

• a decision phase which includes weighing the facts and options presented and may also include, in significant cases, taking into account the views received from other regulatory officials or other governmental elements as to the course of action to be taken; and

• an optional review/reconsideration phase which may take place either within the governmental entity that undertook the previous three phases, or elsewhere in the government; may be done publicly or in private; and may, in some instances, also involve judicial review.

A basic market access right is a conditioned or limited right or privilege (usually set out in an international agreement) granted by one State to another State for use by an air carrier or carriers designated by that other State and may consist of agreed: geographic specifications of routes along which the air service may take place; physical specifications regarding designation of an air carrier or carriers and how a designated carrier may employ aircraft; and physical and/or geographic specifications of what kinds of traffic may be carried. Such rights in total determine the extent of market access granted.

A route right is a market access right which is expressed as an agreed geographic specification, or combination of geographic specifications, of the route or routes over which an air service or services may be held out and performed and of the order in which authorized places may be served. Generally, route rights are found in the route annex of an air transport or air services agreement between States, the annex itself setting forth separately a route or routes for use by the airline or airlines of each party to the agreement.

An operational right is a market access right which is expressed as an agreed physical specification of how many carriers may be designated; of how aircraft may be operated; or of what aircraft types, parts of aircraft, or substitute conveyances may be employed and assigned flight designators over an agreed route or routes. In practice, operational rights may be found in air transport agreements in the route annex, in various articles or in side understandings, or may or may not be implicitly included.

A traffic right is a market access right which is expressed as an agreed physical or geographic specification, or combination of specifications, of who or what may be transported over an authorized route or parts thereof in the aircraft (or substitute conveyance) authorized. Note, however, that the term traffic rights is, in one usage, applied collectively to have about the same meaning as market access rights.

Questions

What are the three basic components of the process of national regulation of air transport?

What is bilateral regulation f air transport?

What is multilateral regulation f air transport?

What is role of ICAO in regulation of air transport?

What is an airline city pair?

What is a city pair in commercial aviation?

How can you classify air services by the geographical areas?

What component of the process of national regulation do you know?

What is a route right?

What is an operational right?

What is a traffic right?

Lecture 11. Economic aspects of air navigation service of air transport

Contents. Organizational structuring of the aeronautical flight service system. Formation and management of air navigation infrastructure, types and characteristics of services. System instructional rules and regulations for the functioning of state and operational services, airport and navigation fees assigning authorities. Principles, policies and procedures of navigation service. Valuation of air traffic navigation services (3 basic principles). The main 5 components of navigation service and air traffic service, aviation telecommunications, meteorological service, search and rescue service, aeronautical information service.

Functions of the state department. Autonomous organization of the public sector. Organization of the private sector. International cooperation in search and rescue. Activities of operational agencies of air navigation services and collection of fees.

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Organizational format of the aeronautical flight service system.

Aeronautical System is a complex human-machine system that, through the use of special technical means, ensures the organization of air traffic with safe, regular, and efficient aeronautical services.

The decisions made by individual States as to the organizational format at the national level under which their ANSPs (Air navigation services provider) operate will depend on the situation in the State concerned, the organization of their airspace and whether provision of services is delegated to other States. Government policy, as well as the experiences of other States, may also affect decisions on organizational format. The most appropriate choice can be determined in the context of the following factors:

a) the legal, institutional and governance frameworks of the government and system of administration in the State;

b) the cost and source of funds required to meet infrastructure needs and to secure the continuity of operations taking into account traffic forecasts and risks (for example, contingency planning to deal with the potential impact of reductions in revenue that could occur due to decreases in air traffic);

c) market conditions including degrees of competition among ANSPs and users;

d) the requirements of the aviation industry; and

e) the contribution of civil aviation to the State's economic and social objectives and the extent to which civil aviation has been developed to meet those needs.

The process of transition from one format to another will also depend on the circumstances and practices of each State but, in general, the transitional issues that may arise include:

a) identification, valuation and transfer of assets;

b) determination of the initial financial structure, staffing and conditions of employment including pension arrangements and maintenance of good labour relations during the transition period;

c) establishment of good corporate governance;

d) establishment of formal relationships between the ANSP and the government, including the military;

e) establishment of formal relationships between the ANSP and the aviation safety and security organization(s);

f) establishment of an economic oversight framework; and

g) establishment of appropriate performance management systems and a consultation mechanism with users and other interested parties.

The historical organizational format of the ANSP is a fully integrated component of the State's bureaucracy, where the operation and provision of air navigation services represent only one of many functions performed by a government entity.

An autonomous air navigation services entity (hereafter called autonomous ANSP) is essentially an independent entity established for the purpose of operating and managing air navigation services, which is empowered to manage and use the revenues it generates to cover its costs. Creating legal entities outside the government is usually called "corporatization". In some circumstances, a single autonomous entity may operate both airports and air navigation services. The autonomous ANSP may also be responsible for the safety regulation of its services (and for aviation safety in general).

International cooperative ventures in the provision of air navigation services have normally proven to be highly cost-effective for provider States as well as users and in some instances constitute the only means for implementing costly facilities and services which offer capacity that exceeds the requirements of individual States. By cooperating in such facility or service provision, the States concerned are able to provide more efficient services and at lower cost than if they had to finance the facilities concerned themselves.

Formation and management of air navigation infrastructure, types and characteristics of services.

Experience gained worldwide indicates that where airports and air navigation services have been operated by autonomous entities, their overall financial situation and managerial efficiency have generally tended to improve. Therefore, it is recommended that, where this is economically viable and in the best interests of providers and users, States consider establishing autonomous entities to operate their airports and air navigation services.

Air navigation services have traditionally been classified into the following five major categories: air traffic management (ATM); communications, navigation and surveillance systems (CNS); meteorological services for air navigation (MET); search and rescue (SAR); and aeronautical information services (AIS). In most States, a single entity does not provide all or most of such air navigation services. Instead, several entities may be involved.

ATM is often provided by the civil aviation administration, although in a growing number of States autonomous entities have been assigned this function. In such instances, the same entity may also be responsible for providing certain CNS services. MET is usually provided by a separate meteorological entity, which in many States reports to another branch of government than does the civil aviation administration or the telecommunication services branch. While aeronautical SAR activities are often coordinated by the civil aviation administration, in most States the aircraft, vehicles, vessels and personnel utilized in the actual SAR operations are provided by the military, civil defence or other similar forces. AIS, on the other hand, tends to be provided by the civil aviation administration, although certain services may be provided by third parties on a commercial basis.

System instructional rules and regulations for the functioning of state and operational services, airport and navigation fees assigning authorities.

Over the past two decades, States have been assigning the operation of airports and air navigation services to autonomous, commercialized and even privatized entities that may have less awareness and knowledge of States' obligations under the Chicago Convention. Also, States are increasingly using multinational facilities and services to meet their commitments. In this respect, it should be noted that States are ultimately responsible for safety, security and economic oversight of commercialized/privatized airports and ANSPs.

The fundamental challenge is to ensure that commercialized/privatized ANSPs perform in line with recognized safety and performance requirements and that, where ANSPs outsource or subcontract certain services (e.g. satellite communication services) to third-party operators, these also deliver the agreed services as per recognized safety and performance requirements. The

provision of air-ground satellite communication services by third-party operators presents a unique set of challenges, in particular with respect to the availability and continuity of such services:

a) The supply chain for satellite communication services involves numerous providers (e.g. satellite operator, ground station operator, network providers). A State or an ANSP would typically enter into an agreement with one entity who acts as a re-seller of all services in the supply chain. The loss of one entity in the supply chain can disable the service.

b) The volume of communications for air traffic services (ATS) is typically low compared to other communications traffic. In difficult economic times, a communications operator may consider the ATS business no longer viable and discontinue this activity to focus on the more profitable sectors of the communications business. This raises business continuity issues.

c) Air-ground mobile satellite communication systems, being complex, use unique technology often custom-built by operators. These systems can therefore be difficult to maintain over the lifetime of the satellite service and may over time result in degraded service and restraints on expansion. In such situations, business continuity may again be jeopardized.

d) States and ANSPs are also affected by the fact that the various air-ground satellite communication systems each use unique technology, which is not interoperable. Airspace users typically choose a system which meets their needs. Each system features different characteristics and hence service monitoring becomes more complex.

Principles, policies and procedures of navigation service. Valuation of air traffic navigation services. The main 5 components of navigation service and air traffic service, aviation telecommunications, meteorological service, search and rescue service, aeronautical information service.

Article 15 of the Chicago Convention sets out the following three basic principles:

a) uniform conditions shall apply to the use of airports and air navigation services in a Contracting State by aircraft of all other Contracting States;

b) the charges imposed by a Contracting State for the use of such airports or air navigation services shall not be higher for aircraft of other Contracting States than those paid by its national aircraft engaged in similar international operations; and

c) no charge shall be imposed by any Contracting State solely for the right of transit over or entry into or exit from its territory of any aircraft of a Contracting State or persons or property thereon.

The establishment of the cost basis for air navigation services charges should observe the following principles:

i) The cost to be allocated is the full cost of providing the air navigation services, including appropriate amounts for cost of capital and depreciation of assets, as well as the costs of maintenance, operation, management and administration.

ii) The costs to be taken into account should be those assessed in relation to the facilities and services, including satellite services, provided for and implemented under the ICAO Regional Air Navigation Plan(s), supplemented where necessary pursuant to recommendations made by the relevant ICAO Regional Air Navigation Meeting, as approved by the Council. Any other facilities and services, unless provided at the request of aircraft operators, should be excluded, as should the cost of facilities or services provided on contract or by the aircraft operators themselves, as well as any excessive construction, operation or maintenance expenditures.

iii) The costs of air navigation services provided during the en-route, approach and aerodrome phases of aircraft operations should be identified separately where possible.

iv) The costs of supporting services such as aeronautical meteorological services (MET), aeronautical information services (AIS) and other ancillary services should also be identified separately.

v) Costs for certain security measures of a preventive nature for the provision of air navigation services, which are specifically related to civil aviation and performed on a routine basis, may be included in the cost basis for air navigation services charges to the extent that they have not already been considered in the context of safety-related measures. Civil aviation should not be charged for

any costs that would be incurred for more general security functions performed by States such as general policing, intelligence gathering and national security. Further, costs associated with airport security should not be combined with security costs incurred with regard to air navigation facilities or services.

Functions of the state department.

Article 15 of the Chicago Convention establishes the basic charging principles for airports and air navigation services and reinforces the concept of freedom of access and non-discrimination set forth in Article 11 with respect to the use of facilities and services for the aircraft of Contracting States in the operation of international air transport.

Each Contracting State may designate the route to be followed within its territory by any international air service and the airports which any such service may use.

Under Article 28 of the Chicago Convention, basic responsibilities are assigned to Contracting States. For example, it is the State that is responsible for the provision of airport and air navigation facilities and services, in accordance with the standards and practices recommended or established from time to time, pursuant to the Convention. In addition, there are obligations that States undertake in air services agreements, where again the State alone is responsible for the observance of stipulations addressing, for example, access to certain airports and routes and key charging principles such as non-discrimination, cost-relatedness, transparency and consultation with users.

States, in view of the potential abuse of the dominant position of ANSPs, are responsible for the economic oversight of their operations. Economic oversight is defined as the function by which a State supervises the commercial and operational practices of an ANSP. In performing their economic oversight function, States should, in particular, ensure that ANSPs consult with users and that appropriate performance management systems are in place.

Autonomous organization of the public sector.

An autonomous air navigation services entity (hereafter called autonomous ANSP) is essentially an independent entity established for the purpose of operating and managing air navigation services, which is empowered to manage and use the revenues it generates to cover its costs. Creating legal entities outside the government is usually called “corporatization”. In some circumstances, a single autonomous entity may operate both airports and air navigation services. The autonomous ANSP may also be responsible for the safety regulation of its services (and for aviation safety in general).

Organization of the private sector.

While the privatized ANSP charges for its services and uses revenues from these charges to fund operating expenses and to finance capital expenditure, some prescribed operations (e.g. military) may be exempted from charges, and the costs for these prescribed services may be borne by government. Arrangements for the coordination of civil/military traffic, including common use of facilities and services, and associated financial issues would need to be formalized and agreed with the ministries concerned.

Privatization of an ANSP requires careful consideration of a number of factors. These include an assessment of market conditions and the degree of competition to minimize the risk of ANSPs, on the one hand, engaging in anti-competitive practices or abusing their dominant position or, on the other hand, the possibility of being subject to market pressure by users. In addition, the objectives of change of ownership structures may need to be clearly defined through appropriate consultations with existing ANSP management, users and other interested parties. It is also noted that privatization should not in any way diminish the State’s requirement to fulfil its international obligations, notably those contained in the Chicago Convention, its Annexes and in air services agreements, and to observe ICAO’s policies on charges in Doc 9082.

Private participation and private involvement, which are synonyms, mean that the private sector has a role in the ownership, control and/or management of an ANSP while majority or ultimate

ownership remains with the government. To date private participation/involvement in ANSPs is minimal, and there have been only a few cases of a public-private partnership (PPP). The advantage of a PPP is that the management skills and financial acumen of private businesses could create better value for money for taxpayers when proper cooperative arrangements between the public and private sectors are used.

International cooperation in search and rescue.

Contracting States shall, individually or in cooperation with other States, arrange for the establishment and prompt provision of search and rescue services within their territories to ensure that assistance is rendered to persons in distress. Such services shall be provided on a 24-hour basis.

Those portions of the high seas or areas of undetermined sovereignty for which search and rescue services will be established shall be determined on the basis of regional air navigation agreements. Contracting States having accepted the responsibility to provide search and rescue services in such areas shall thereafter, individually or in cooperation with other States, arrange for the services to be established and provided in accordance with the provisions of Annex.

Basic elements of search and rescue services shall include a legal framework, a responsible authority, organized available resources, communication facilities and a workforce skilled in coordination and operational functions.

Search and rescue services shall establish processes to improve service provision, including the aspects of planning, domestic and international cooperative arrangements and training.

In providing assistance to aircraft in distress and to survivors of aircraft accidents, Contracting States shall do so regardless of the nationality or status of such persons or the circumstances in which such persons are found.

Contracting States having accepted responsibility to provide search and rescue services shall use search and rescue units and other available facilities to assist any aircraft or its occupants that are or appear to be in a state of emergency.

Where separate aeronautical and maritime rescue coordination centres serve the same area, States shall ensure the closest practicable coordination between the centres.

Contracting States should facilitate consistency and cooperation between their aeronautical and maritime search and rescue services.

Contracting States should establish joint rescue coordination centres to coordinate aeronautical and maritime search and rescue operations, where practical.

Activities of operational agencies of air navigation services and collection of fees.

Another effective but less encompassing means for States to benefit from international cooperation in their provision of air navigation services is to participate in the operation of a *charges collection agency*. This is because States individually operating route facilities and charging for the services rendered will be involved in considerable accounting work and may also encounter collection difficulties where there is a substantial volume of overflying traffic. In such circumstances, a group of adjoining States might benefit significantly from the formation of a joint charges collection agency. This agency would collect route air navigation services charges on behalf of all of the participating States, including those that are overflown. Since the majority of aircraft are likely to land in the territory of at least one of the participating States, this would tend to ease the collection of air navigation services charges. The agency would then transfer to each participating State the charges revenue collected on its behalf. Added to each charge levied for each participating State would be a small fee or percentage to cover the State's share of the agency's costs. A joint charges collection agency should also benefit the aircraft operators because the collection costs attributable to each participating State should be lower than the State would otherwise have to face and need to recover from the users. There will also be noticeable savings for users in terms of administrative costs by receiving one invoice and in one currency compared to separate invoices from all the States involved. Another factor to be considered is the additional

prospect of further economies resulting from the employment of better trained staff and improved procedures.

The most prominent examples of charges collection services are those operated by EUROCONTROL, the United Kingdom (for traffic in the North Atlantic) and the International Air Transport Association (IATA). EUROCONTROL operates a separately organized and financed collection agency or office, which serves both EUROCONTROL and other States. Similarly, the office in the United Kingdom that collects route charges levied by the United Kingdom has been contracted to collect the route charges levied by Denmark and Iceland for the services they provide on the North Atlantic under the ICAO Joint Financing Agreements, as well as the charges levied to recover the costs of the Height Monitoring System Programme operated jointly by six States and administered by ICAO. IATA collects en-route charges on behalf of around thirty, mainly developing, States through the IATA Enhancement and Financing Services.

Questions

What is Aeronautical System?

What factors does the State take into account when deciding on the organizational structure of the ANSP at the national level?

What is the historical organizational format of the ANSP?

What is an autonomous air navigation services entity?

What is international cooperative ventures of the ANSP?

What are types of air navigation services and responsibilities of their services?

What are basic principles of air traffic navigation services?

What are functions of the State in the air navigation services?

What is the autonomous air navigation services entity?

What are principals of private participation in air navigation services?

What are the basic principles of organization of search and rescue?

What is the charges collection agency?

Lecture 12. Synergistic efficiency of aviation management

Contents. Social and economic efficiency of international air transport logistics activities in the conditions of globalization of the world market of production and consumption of products and services. The leading role of the interests of consumers – customers of logistics services. Corporateness as the main feature of logistics activity: the priority of serving corporate customers and the corporate principle of partnership interaction of business entities of the air transportation chain. Organizational corporate culture and moral and ethical principles of interaction between subjects of logistics activity. Synergy as a complementary effect of international partnership interaction. The geoeconomic effect of post-logistics influence on the integration processes of optimizing the use of resources, solving demographic problems. Additional possibilities of cognitive development of humanity, communication and mutual understanding.

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Social and economic efficiency of international air transport logistics activities in the conditions of globalization of the world market of production and consumption of products and services.

Air transport provides significant economic and social benefits. It facilitates tourism, trade, connectivity, generates economic growth, provides jobs, improves living standards, alleviates poverty, provides a lifeline for remote communities and enables a rapid response when disasters occur.

Air transport is a major global employer, supporting a total of 87.7 million jobs worldwide and providing 11.3 million direct jobs. Aviation enables $3.5 trillion in global GDP. If aviation were a country, it would be the 17th largest economy in the world, supporting nearly 3.5 trillion dollars in economic impact.

In September 2020, ATAG published the latest edition of its flagship report, Aviation: Benefits Beyond Borders, which explores the various ways in which aviation contributes to the economy, jobs, the lives of millions of people around the world and how it contributes to sustainable development:

Africa: Air transport supports 7.7 million jobs in the region and $63 billion in GDP. Air traffic in Africa is expected to continue to grow at about 3.4% per year over the next two decades.

Asia-Pacific: The region with the highest levels of passenger traffic, transporting 1.7 billion passengers worldwide. Air transport in the region supports 46.7 million jobs and $944 billion of the country's GDP. Air traffic in Asia-Pacific is expected to continue to grow at about 4.2% per year over the next two decades, accounting for the largest growth rate worldwide.

Europe: This is the second largest market after Asia-Pacific, transporting 1.2 billion passengers, and supporting 13.5 million jobs in total (out of which 2.7 million jobs are created by the aviation industry itself) and $991 billion in European economic activity. It is expected that air travel in Europe will continue to grow at about 2.1% per year over the next twenty years.

Latin America and the Caribbean: The aviation sector in Latin America and the Caribbean supports 7.7 million jobs and $187 billion in economic activity.

Middle East: Air transport supports 3.4 million jobs and $213 billion in GDP. There is a potential growth of 4.1% per year in the region's air travel over the next decade.

North America: Air transport supports 8.7 million jobs in total and $1.1 trillion in North American economic activity.

In September 2021, ATAG produced an updated fact sheet analysing the economic impact of Covid-19 on aviation. It found that 44.6 million jobs supported by aviation were estimated to be

at risk due to the pandemic, as well as $1.7 trillion in economic activity that is normally supported by aviation.

The leading role of the interests of consumers - customers of logistics services.

Due to the competitive global airline services market, customers can select from a variety of travel options. This leads airline services to make significant efforts to improve their services. Moreover, airline companies have sought to determine how to improve their services to maintain the current user base and to attract users of other services. Consistent with these efforts, the majority of the companies provide online services to allow customers to easily reserve their flights and to obtain information on additional services provided by the companies. Customers can also interact with airline service providers and evaluate their experience online. Thus, the online and mobile services of airline companies are considered to be other competitive markets and efficient environments for improving their services based on the feedback of the customers.

Consumer experience is very important in the airlines. From all the statistical analysis, it is shown that trust in the brand is the most important factor in consumer experience and it has a positive relationship with loyalty and advocacy. However certain factors such as dynamic pricing can have a negative effect on loyalty and unique services can have a negative effect on advocacy. Hence, airlines industry should focus on the factors: brand factors, services, loyalty, pricing, loyalty points and consumer engagement.

Corporateness as the main feature of logistics activity: the priority of serving corporate customers and the corporate principle of partnership interaction of business entities of the air transportation chain.

Five Fundamental Principles of Partnership:

1. Two-way exchange, based on give and take: Partnerships exemplify the old adage — it takes two hands to clap. Asymmetric partnerships, where one partner does all (or most) of the giving and the other does all (or most) of the taking are usually short-lived. For a partnership to be sustainable, the giving and the taking must remain commensurate, or at least perceived to be so by both partners. The terms and conditions (tacit or spelled out) that form the basis for a partnership define the nature, scope and quantum of the give and take between partners, and as such may be taken to represent a kind of social contract (if not a legal one).

2. Fair exchange of value: The terms of engagement in such social or legal partnership contracts are understood to represent a fair exchange of value between the partners. In formal contracts between governments, corporations and other organizations, such terms are explicitly spelled out in a document signed-off by both partners. In informal relationships such as friendships, romantic relationships etc. the terms are usually implicit. However, disconnects can and do happen, when such implicit terms are either not fully understood or are interpreted differently by one of the partners.

3. Peer-to-peer, not master-slave: Because partnerships are based on engagement terms that represent a fair exchange of value, partnerships are intrinsically relationships of equals, and neither side can honestly claim to have an “upper hand” over the other. Quite often, one partner tends to be more dominant and drives the relationship hard. Traditionally, in the commercial world, customers tend to drive their suppliers hard by leveraging their power of choice, just as in male-dominated societies it is considered normal for husbands to dominate over their wives. Such tendencies erode the sustainability of the partnership and weaken it, generally speaking. (There are exceptions, of course — some personal relationships are based on dominant/ submissive duality, out of choice by both partners.) In the most extreme cases, relationships in which one partner oppressively and consistently dominates over the other may be termed “abusive”.

4. Commitment to continuity: Partnerships are built on commitments (by both partners) to common goals and shared interests within the framework of the terms of engagement. Unless explicitly time-bound, such commitments are presumed to continue indefinitely. When circumstances change and a partner is unable to honor the commitment, it may be time to review

the terms of engagement and either negotiate a new set of mutually acceptable terms and conditions (that constitute a fair exchange of value under the new circumstances) or agree to disagree i.e., discontinue the partnership.

5. Enduring trust is built by fulfilling promises of mutually rewarding positive sum outcomes: Before engaging with each other, partners go through a careful selection process and pick the one that they believe best embodies the promise of a win-win relationship. The typical metaphor for this preliminary phase is “courtship” or “dating”. Promises made during this selection process are validated during the initial period of engagement, which is critical to the establishment of mutual trust and confidence in each other’s ability and commitment to deliver on the terms of engagement. After the “honeymoon” period, the more each partner continues to enrich the relationship with outcomes that bring prosperity and success to both partners, the stronger the partnership grows. The trust between the partners deepens as more and more promises are fulfilled, more and more often.

Airline partnerships are becoming increasingly popular in the aviation industry not only to increase the available seat miles but also to offer more destinations, frequent flyer programs, and other benefits to customers. There are several types of airline partnerships available, and understanding them can help you make more informed travel decisions. The most common types of airline partnerships and their benefits:

1. Code-sharing partnerships are the most common type of airline partnership. In this type of partnership, airlines agree to sell seats on each other's flights, which means that one airline can sell tickets for a flight operated by another airline. This allows airlines to offer more destinations without having to operate their own flights. For example, if you want to travel from New York to Sydney, you may be able to book a code-shared flight operated by Qantas, but sold by American Airlines. For example, Delta Airlines and Air France have a codeshare agreement, so Delta can sell seats on Air France flights under the Delta code. This partnership allows both airlines to expand their reach and offer more destinations to their customers.

2. Interline partnerships allow airlines to sell tickets that include flights operated by multiple airlines. This means that you can purchase a single ticket that covers flights on two or more airlines, even if they are not code-sharing partners. This type of partnership is beneficial for travelers who want to travel to destinations that are not served by a single airline. For example, if you want to travel from New York to Bali, you may be able to purchase a single ticket that covers flights on two or more airlines, such as Delta and Cathay Pacific.

3. Alliance partnerships are agreements between multiple airlines to cooperate on a variety of fronts, including marketing, frequent flyer programs, and code-sharing. The three major airline alliances are Star Alliance, SkyTeam, and Oneworld. These alliances allow airlines to offer a wider range of destinations and benefits to customers. For example, if you are a member of the United Airlines MileagePlus program, you can earn and redeem miles on flights operated by all Star Alliance member airlines.

4. Joint ventures are more complex partnerships that involve revenue-sharing and other forms of cooperation between airlines. In a joint venture, airlines agree to coordinate schedules, pricing, and other aspects of their operations on certain routes. This allows them to offer more competitive pricing and better service to customers. For example, Delta and Virgin Atlantic have a joint venture that allows them to offer more flights between the US and the UK, with coordinated schedules and pricing.

5. Equity partnerships involve airlines buying stakes in each other's companies. This type of partnership is less common than the others, but it can provide airlines with more control over their partners' operations. For example, Delta has an equity partnership with Virgin Australia, which allows Delta to have more influence over Virgin Australia's operations.

Airline partnerships offer many benefits to customers, including more destinations, frequent flyer programs, and better service. The type of partnership that is best for you depends on your travel needs and preferences. Code-sharing partnerships are the most common and can offer a wide range of destinations, while interline partnerships are beneficial for travelers who want to travel to

destinations that are not served by a single airline. Alliance partnerships provide benefits to frequent flyers, while joint ventures and equity partnerships offer more control over operations.

Airline partnerships offer several benefits to the airlines, passengers, and the industry as a whole. These partnerships provide airlines with the opportunity to expand their route network, increase their market share, and improve their profitability. Passengers benefit from the increased availability of flights, seamless travel experience, and loyalty program benefits. The industry benefits from increased competition, improved connectivity, and reduced operational costs:

1. Expanded Route Network: Airline partnerships allow airlines to offer their passengers access to a wider range of destinations without having to fly there themselves. For example, a partnership between Delta Airlines and Air France-KLM allows Delta to offer its passengers access to over 1,000 destinations in Europe, Africa, and the Middle East. This expands Delta's route network and provides its passengers with more options for travel.
2. Improved Profitability: Airline partnerships can also improve the profitability of airlines by reducing operational costs. For example, American Airlines and British Airways have a joint venture that allows them to coordinate their schedules, pricing, and revenue management. This collaboration has resulted in increased efficiency and cost savings for both airlines.
3. Seamless Travel Experience: Airline partnerships can also provide passengers with a seamless travel experience. For example, an alliance between Star Alliance airlines allows passengers to check-in for their flights and receive their boarding passes at any member airline's counter. This eliminates the need for passengers to check-in separately for each connecting flight and provides them with a more convenient travel experience.
4. Loyalty Program Benefits: Airline partnerships also provide loyalty program benefits to passengers. For example, a partnership between Delta and Virgin Atlantic allows members of Delta's SkyMiles program to earn and redeem miles on Virgin Atlantic flights. This provides passengers with more options for earning and redeeming miles and encourages loyalty to the partner airlines.
5. Increased Competition: Airline partnerships can also increase competition in the industry. For example, a partnership between Emirates and Qantas allowed Emirates to offer its passengers access to over 50 destinations in Australia and New Zealand. This partnership increased competition in the region and provided passengers with more options for travel.

Overall, airline partnerships offer several benefits to airlines, passengers, and the industry as a whole. These partnerships provide airlines with the opportunity to expand their route network, increase their market share, and improve their profitability. Passengers benefit from the increased availability of flights, seamless travel experience, and loyalty program benefits. The industry benefits from increased competition, improved connectivity, and reduced operational costs.

Organizational corporate culture and moral and ethical principles of interaction between subjects of aviation logistics activity.

Collaboration is also essential in aviation, as success depends on the coordination and communication of many different departments and teams. A company culture that values teamwork and open communication can help ensure that everyone is working towards the same goals and that any issues or challenges are addressed in a timely and effective manner. This can also help create a sense of camaraderie and support among employees, which can improve morale and reduce turnover.

Finally, a strong aviation company culture should provide employees with a sense of purpose and meaning. When employees feel that their work is making a positive impact on society, they are more likely to be engaged and motivated. This can be achieved by emphasizing the importance of the aviation industry in connecting people and facilitating commerce and travel.

In conclusion, a strong company culture is essential for success in the aviation industry. By fostering a culture of safety, innovation, collaboration, and purpose, aviation companies can attract and retain top talent, improve operational efficiency, and achieve their goals. As the aviation

industry continues to evolve, it will be those companies with the strongest cultures that will be best positioned to meet the challenges of the future.

Beyond the airline industry, many organisations have understood that nurturing an adequate culture within the organisation is a tool to gain competitive advantages. A wealth of data exists to prove what makes organisations and teams effective and successful. In fact, scientific research shows that organisations that have a culture adapted to their environment and their needs perform better economically and are more resilient in times of crisis.

By actively and positively shaping their internal culture, organisations can reap safety benefits and also gain a commercial and economical edge. In other words, an organisational resilience that will help them not only to survive, but as well to thrive in a difficult context, now and beyond the current crisis.

ECA (The European Cockpit Association) believes that part of the issues that organisations face today need to be addressed by focussing beyond Just Culture for the pilots (and other front end operators), and by embedding this concept into a wider organisational context.

To capture and help operationalising this positive active shaping of an internal organisational culture, ECA proposes the following definition of a 'Positive Organisational Culture in Aviation':

A Culture where an organisation actively creates an environment where motivation and safety-conscious behaviour occur as a natural consequence of a psychologically safe work environment, where staff feel included, trusted, are empowered to, and willingly show, discretionary effort in order to lead the organization to success.

ECA proposes the following as essential attributes and cornerstones of this Positive Performance Culture that balances an organisation's economic realities, staff motivation and well-being, as well as high safety standards:

- a psychologically safe environment
- integration of Just Culture attributes
- credible values
- leadership
- a transparent and balanced employment relationship.

Synergy as a complementary effect of international partnership interaction.

The airline service has to go through a complicated process to deliver service quality to the customers. To serve their customers better, the airline needs to establish a long-term relationship with the suppliers to reduce the cost and improve the competitiveness, safety, and service quality.

The synergy between internal and external supplier will produce high productivity and cost saving. The process of selecting the right supplier might be a time consuming. The right supplier is external counterpart which can match and capable to work with an organization to achieve goals. Once found, then the long-term relations should be maintained. The airline is advised to manage a high degree of coordination and communication between the activities of primary supplier and organization. This is important to secure the cost, safety, and service quality

The operationalization of the synergy idea is employees in a company. They are included as the team members who work closely with the external supplier to deliver an excellent service as well as the early customers who experience the quality of service before it is ready for them. Hence, the employees will be able to judge their own company service, do evaluations and give recommendations for improvement. Based on the schematic service quality process, it would be able to prevent service failure and enhance airline service performance because the suggestions are given by employees who will improve the quality of service and safety. In this scenario, the employees represent the customers.

The geoeconomic effect on aviation.

The aviation industry is a complex and dynamic sector that is influenced by a wide range of factors. These factors can vary from global economic trends to technological advancements and

changes in consumer behavior. Understanding these factors is crucial for anyone interested in the aviation industry, as they can significantly impact the sector's growth and development.

Some key factors that influence the aviation industry globally include globalization, rising incomes, the expansion of low-cost carriers, and technological improvements. Each of these factors uniquely shapes the aviation industry and drives demand for air travel.

Globalization: Globalization has had a significant impact on air traffic growth. As the world becomes more interconnected, there is an increasing demand for air travel to facilitate trade, tourism, and cultural exchange. The development of global business has led to an increase in demand for air cargo services. Airlines have responded by expanding their cargo networks and adding new routes to serve key trading hubs. The growth of e-commerce has also contributed to the increase in air cargo demand as more goods are shipped by air. The development of international tourism has also contributed to the growth in air traffic. As people become more interested in exploring other cultures and destinations, there is an increasing demand for air travel to facilitate these trips. Airlines have responded by adding new routes to serve popular tourist destinations and by offering more affordable fares to make air travel more accessible. Hence, globalization has played a significant role in driving demand for air travel globally and is expected to continue to do so in the future.

Rising incomes: Rising incomes play a significant role in driving demand for air travel. As people's incomes increase, they have more disposable income to spend on discretionary items such as travel. Increased revenue has increased demand for air travel, particularly in emerging markets with rapidly rising incomes. In many parts of the world, air travel is still considered a luxury and is not accessible to everyone. However, as incomes rise and air travel becomes more affordable, more people can travel by air, which has increased demand for air travel, particularly leisure travel. Airlines have responded to this increase in demand by expanding their networks and adding new routes to serve emerging markets. They have also introduced new products and services to cater to the needs of travelers from these markets. Rising incomes have played a significant role in driving demand for air travel globally and are expected to continue to do so.

Expansion of low-cost carriers: The development of low-cost airlines has significantly impacted the aviation industry. Low-cost carriers have made air travel more affordable and accessible to more people, which has increased demand for air travel, particularly for short-haul flights. Low-cost carriers have been able to offer lower fares by adopting a low-cost business model. It involves reducing operating costs by using a single aircraft type, flying to secondary airports, and offering fewer amenities and services. These cost savings are passed on to passengers through lower fares. The growth of low-cost carriers has also led to increased competition in the aviation industry. Traditional full-service airlines have been forced to lower fares and improve their services to compete with low-cost carriers, resulting in lower costs and more passenger choices. The expansion of low-cost airlines has significantly impacted the aviation industry by making air travel more affordable and accessible to a wider range of people.

Improvements in technology: Advances in technology have significantly impacted the aviation industry's growth. Advancements in technology have made air travel more efficient, convenient, and safe. One of the key areas where technology has had an impact is the development of more fuel-efficient aircraft. Newer aircraft can fly further using less fuel, reducing the cost of air travel and making it more environmentally sustainable. Advancement in technology has led to an increase in demand for air travel as it becomes more affordable and accessible. Technology has also improved navigation and communication systems, making air travel safer and more reliable. For example, using satellite-based navigation systems has improved the accuracy of aircraft positioning, reducing the risk of collisions and other incidents. In addition, technology has improved the passenger experience by making it more convenient and enjoyable. For example, using mobile apps and self-service kiosks has made it easier for passengers to check in and board their flights. Onboard entertainment systems have also improved, offering passengers a wider range of movies, TV shows, and other content to enjoy during their flights. Finally, technological

improvements have played a significant role in driving the growth of the aviation industry by making air travel more efficient, convenient, and safe.

Additional possibilities of cognitive development of humanity, communication and mutual understanding in aviation

Cognition is a key human factor to be considered when studying, developing, and improving on aviation and aerospace operations. People serve many important roles in aviation and aerospace, and their participation is necessary for successful operations. Improving understanding of the minds of the people in those sociotechnical systems is on the critical path to increasing system performance.

Cognitive science recognizes how the brain works, and that can be applied that to improve aviation safety.

Aviation communication has five types: verbal, nonverbal, written, written and graphics, and human-machine and machine-machine communications.

1. Verbal communication or speech is the most common communication medium used in an aircraft or in the aviation industry. It is used by the cabin crew, aircraft technicians, pilots, and flight attendants who use this medium to take care and communicate with the passengers. Also, this type of communication lessens the misunderstanding and miscommunication when it comes to giving a job order or information.

Speech or verbal communication is composed of four conventional primary characteristics: intensity, frequency, harmonic composition, and time.

2. Nonverbal communication or NVC is important in every person-to-person situation. It has two major kinds– body language and physical appearance. Researchers found out that there are 6 types of body expressions under non-verbal cues:

- Emblems – common gestures or sign language
- Illustrators – adding emphasis or giving directions
- Regulators – to control verbal interaction, such as nodding
- Adapters – help to control emotions or overcome discomfort
- Affect displays – reveal the feelings of the person
- Postures and gestures – various movements such as sitting in a low chair with arms and legs tightly crossed and looking down

3. Written Communication. This type of communication is more often used in air transport operations, such as flight deck documentations, operation manuals, checklists, data cards, and other parts of flight operations. Also known as one-way communication, sending checklists and or other information to the pilot.

4. Written and Graphic Communication. In addition to written communication, this form allows the sender to provide a clearer and more specific message to the recipient by providing or including graphic displays in the message.

Some graphics or illustrations include flight maps, charts and cabin displays, and safety demonstrations on screens.

5. Human-Machine and Machine-Machine Communication. Also called Automation, it is an aviation communication system that helps lessen human error. It is when the pilot communicates with the machine in the form of a command and that message gets transmitted to other machines. Automation lessens the possibility of pilot error when it comes to routine actions, giving them the advantage of being able to focus on more complicated and taxing tasks while also adding a management component to their duties. Also termed as “human-centered automation” here are its principles:

- Premise – the pilot is responsible for the safety of flight and the controller is responsible for the traffic separation and safe traffic flow.
- Axiom – Pilots must remain in command of their flights and controllers must remain in command of air traffic.

– Corollaries – The pilot and controller must be actively involved, must be adequately informed, be able to monitor the automation assisting them. The automated systems must, therefore, be predictable and also monitor the human operators. Each intelligent element of the system must know the intent of other intelligent system elements.

How can Aviation professionals work effectively with colleagues from diverse cultures:

1. Respect differences. One of the first steps to working effectively with colleagues from diverse cultures is to respect their differences and avoid making assumptions or judgments based on stereotypes. Learn about their cultural values, norms, preferences, and behaviors, and acknowledge that they may differ from yours. Be open-minded and curious, and ask questions to clarify any misunderstandings or confusion. Respect their opinions, perspectives, and contributions, and avoid imposing your own views or standards on them.

2. Communicate clearly. Communication is key to any successful collaboration, but it can be especially challenging when working with colleagues from diverse cultures. Language barriers, accents, jargon, slang, and non-verbal cues can all affect how messages are delivered and received. To communicate clearly, use simple, direct, and polite language, and avoid idioms, sarcasm, or humor that may not translate well. Repeat or rephrase important points, and check for understanding and feedback. Use multiple channels of communication, such as email, phone, video call, or chat, and adapt to the preferred mode of your colleagues. Be aware of the cultural context and nuances of communication, such as tone, volume, eye contact, gestures, and silence, and adjust accordingly.

3. Collaborate effectively. Collaboration is essential to achieving shared goals and outcomes in the aviation industry, but it can also be influenced by cultural factors, such as power distance, individualism, uncertainty avoidance, and time orientation. To collaborate effectively, establish clear roles, responsibilities, and expectations for each team member, and communicate them regularly. Align your objectives, strategies, and standards, and monitor your progress and performance. Seek input and feedback from your colleagues, and provide constructive and respectful criticism. Recognize and appreciate the strengths and skills of your colleagues, and leverage their diversity to enhance creativity and innovation. Celebrate your achievements and successes as a team, and learn from your challenges and failures.

4. Manage conflicts. Conflicts are inevitable in any team, but they can be more difficult to resolve when working with colleagues from diverse cultures. Conflicts can arise from different communication styles, values, beliefs, interests, or goals, and they can affect the team's performance, morale, and relationships. To manage conflicts, identify the source and nature of the conflict, and address it as soon as possible. Use active listening and empathetic skills, and try to understand the perspective and feelings of your colleagues. Avoid blaming, accusing, or attacking them, and focus on the problem, not the person. Seek common ground and mutual benefits, and negotiate a fair and acceptable solution. Apologize if you have offended or hurt anyone, and forgive if you have been offended or hurt.

5. Learn and grow. Working with colleagues from diverse cultures can be a rewarding and enriching experience, but it also requires continuous learning and growth. Be willing to learn from your colleagues, and share your own knowledge and experience with them. Seek feedback and evaluation from your colleagues, and use it to improve your skills and performance. Reflect on your own biases, assumptions, and behaviors, and challenge them if they hinder your cross-cultural collaboration. Seek opportunities to expand your cultural awareness and competence, such as attending training, reading, traveling, or joining networks. Embrace diversity as an asset and a source of competitive advantage in the aviation industry.

Questions

What is the role of international air transport?

What types of communication are used in international air transport?

What are fundamental principles of partnership?

What types of airline partnerships are used in international air transport?

What types of benefits are by airline partnerships?

How does aviation company culture help to improve interaction between subjects of aviation logistics activity?

How can airlines synergy approach via partnerships?

What factors influence the aviation industry globally?