

Agile Transformation through the Performing Management of It and Cyber Security Projects, at the Government Level

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Abstract. Modern theories of intelligence have developed from the observation that the person, throughout life, is in constant development. In order to be successful, certain conditions must be met. These conditions for achieving success in life depend on the skills that are formed during formal education, or at least should be pursued as goals, beyond the disciplines.

In a current information society, the quality of life as well the perspectives of social change and economic development depend on information and its exploitation, especially in the institutional field of managing computer applications for the absorption of European funds, becoming a matter of national importance, with critical values for national security, characterized by the state of economic equilibrium. Scientific knowledge and information are of particular importance in the global information society by: supporting innovation through technology, promoting economic development through the use of emerging technologies, making decisions efficiently and transparently at government level.

The implementation and use of intelligent technologies have a decisive role in the development of the degree of digitization of public services through non-refundable funding from European funds and the National Recovery and Resilience Plan. The reinvention of the government can be transformed into a reality through the digitization and computerization of the public administration, assuming the modernization of the infrastructure through specific sources of funding, such as European funds, ensuring security through advanced cyber protection and defense capabilities against possible vulnerabilities, risks or cyber-attacks.

Achieving performance within the public institution requires an increased concern for innovation, creativity and change.

Keywords: transformations; synergy; emerging technologies; agile e-business; awareness; automation of repetitive processes.

Introduction

In the process of building the knowledge society, it is necessary to reduce the digital gap, eliminating disparities in development, increasing the coverage area at the level of all countries, regarding the benefit generated by the utilization of the information and knowledge accessed.

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Success in development will be linked to the human capacity to assimilate and adopt new technologies, by using them in new fields of activity, such as products and services.

These aspects will generate a reclassification of knowledge, the model of access to knowledge undergoing transformations, the manifestation of the main interest, no longer directed towards the universal aspect, the concern becoming focused on the local space, creating a migration from the word, to the image, from speech to personality. Aptitude is not an entity in itself, but a psychic endowment that is constituted, manifested, in and through activity.

Aptitude is an essence that is phenomenalized in activity, and activity is the very way of constituting and being of aptitude. As is known, aptitude is also based on certain native elements (predispositions). Activity is the way in which predispositions pass from possible to real, representing skills, and activity is also the one through which and in which aptitude (capacity) generates the phenomenon of creativity, a fundamental concept in relation to aptitude.

Creativity is a mental activity, in the operational sense given by J. Piaget, as the totality of mental operations (intellectual, affective and volitional), complex, dynamic, composable and reversible, etc. Thus, the concept of creativity can actually be reported and reduced to a consistent concept, rigorously described and defined in genetic psychology. Starting from these premises, creativity can be defined as the essential and integral ability of the person, resulting from the combined activity of all his psychic functions (intellectual, affective and volitional), conscious and unconscious, native and acquired biological, psychophysiological and social, involved in the production of new, original and valuable ideas. The concept of creativity is linguistically and semantically very close to the concept of creation. The notion of creativity shares linguistic and semantic similarities with the notion of creation. Creativity entails generating fresh and innovative ideas, while creation involves actualizing those ideas into artistic, scientific, or technical endeavors, resulting in tangible outcomes such as artworks, scientific discoveries, or technical inventions. From creativity to creation is often a long and difficult road. The creative process involves going through the following four stages:

- Preparation - based on the following operations: identifying the problem in optimal terms (nature, specificity, time, etc.); analysis of problem data in order to clearly formulate them (premises, principles, possible and necessary resources), accumulation and selection of the necessary information for the correct approach to the problem; the processing and systematization of the stored information, the elaboration of the strategy for solving the problem at the level of an operative plan;
- Incubation- a complex action that can be carried out intensively or extensively through various operations of organizing and reorganizing the information previously prepared through processing, which capitalizes on the individual and social experience of the subject at the level of his consciousness but also in the plane of his deep links, dependent on the area of the unconscious but and the conscious;
- Illumination - the complex action of associating and combining information that triggers the moment of inspiration, respectively of discovering the optimal solution to solve the problem;
- Verification - the complex final evaluation action of the previously adopted solution, achievable through assessment, validation, application operations, under conditions of amendment, finishing, adjustment, reorganization, permanent improvement.

The creative process involves notifying and solving some problems, a complex action based on the following operations: defining and understanding the type of problem, advancing some virtual solutions, hypothetical probable solutions, (re)updating - activating the knowledge and abilities necessary to choose the optimal solution, choosing the solution optimal on the criteria of

originality and efficiency, the application of the optimal solution within the specific framework defined by the existing problem; checking how to solve the problem in a managerial sense (systematic - optimal - strategic approach).

Agile approaches for the implementation of cyber security projects within the Ministry of European Investments and Projects.

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At the European level, continuous professional training represents a strategic priority, being one of the actions that are the object of the social dimension of the EU strategy. In the European context, there is no longer only a need to train civil servants, but also to ensure continuity of professional training in accordance with the European principle of lifelong learning.

Humans have three ways of thinking, depending on the types of connections between neurons: serial thinking; associative thinking; unitive thinking. Unfortunately, the analysis of the training needs of the personnel from the central public authorities represents a less frequently used tool for organizational development and the increase of the quality of public services. The analysis of the training needs of civil servants and contractual staff within public administration institutions allows identifying the ways in which the level of training of civil servants can contribute to increasing the performance of the institution in which they carry out their activity. The analysis can identify the discrepancies between the qualifications needed to fulfill the operational objectives of the institution and the real level of training of civil servants.

A modern public administration must be characterized by efficient and effective operation, transparency, adaptability and predictability. The use of new information and communication technologies is the main means of putting these concepts into practice, promising to reduce the administration's operating costs, rationalize the decision-making process and increase citizen involvement in the administrative act. All this presupposes, in addition to ensuring appropriate technical equipment, the existence of personnel capable of using these technologies. The complex process of continuous training in the Public Administration must not be an isolated stage action, but a continuous approach with a significant character of adaptability and flexibility.

The duality of the current society, perceived as a global entity and on the other hand, as an alloy made up of elements spread worldwide, is produced by the electronic means of communication, making up a global virtual space, inside which the notion of an unknown entity, losing and the semantic notion, realizing a direct relationship between users, manifested by: deterritorialization, the creation of a world market, the capitalization of a stock exchange accessible from anywhere and permanently, thus providing information about the circulation of capital worldwide.

A global environment will be created, structured on distinct individual models of life. Emerging technologies produce a division in local plans, by focusing attention on certain specific sectors in the sphere of marketing, advertising and mass media, by promoting symbols and elements of culture and identity.

The division generated by telecommunications is seen as a virtual world, where codes and digital systems are perspectives of the life of the modern individual. Thus, the individual's adaptation to information technologies or their ability to serve the individual's interests, manifesting an inherent interdependence in the process of using emerging technologies, as well as the need to master certain levels of knowledge, in the continuous changes specific to technological progress, challenging and inviting individuals to a perpetual specialization and discovery of new ways of technological transformation and innovation.

The use of intelligent technologies will generate the development of the degree of digital culture and cyber security, among public official users, in the current context for e-business, as a result of changing the traditional work style by adopting new methods developed by using emerging technologies.

The implementation of projects aimed at ensuring the security of the cyber infrastructure used in the administration of European funds, was and will be conditioned by a cooperation with the competent institutions in the field, thus constituting the premises of future strategies, in accordance with the European legislation in force, with the aim of both ensuring cyber security, as well as increasing the level of awareness of the importance of ensuring the state of cyber security at the government level.

The public administration reform process requires the introduction and use of modern concepts, characteristic of public management, used in the administrations of the member countries of the European Union. This approach will lead to a more efficient management of public funds and improve the implementation of European standards.

Agile approaches can be used to develop E-business solutions at the government level by breaking the development process into smaller, manageable chunks, testing and continuously iterating the solution, involving stakeholders throughout the development process, and adapting to changing requirements. This can lead to a more efficient and effective development process that provides a solution that meets the needs of both the government and its citizens. To implement agile project management skills in a government organization, the following steps can be taken: 1. Educate organization management and stakeholders on agile methodologies and their benefits; 2. Identifying projects that can benefit from an agile approach and creating cross-functional teams to work together; 3. Develop an agile project management framework that aligns with the organization's goals and objectives; 4. Defining project goals and objectives and prioritizing work based on value and impact; 5. Using agile methods such as sprints, stand-up meetings and retrospectives to manage projects; 6. Fostering a culture of collaboration, feedback and continuous improvement; 7. Ensuring that the project management team has the necessary skills and training to effectively apply agile methodologies; 8. Monitor project progress and adapt approach as needed.

Thus the implementation of Kanban in Jira at the government level can be achieved for better project management. Agile approaches such as Kanban and Jira can be used to support the implementation of agile methodologies in emerging technology implementation and software development projects. Kanban is a visual tool that allows teams to manage their workflow by visualizing and optimizing their workflow. It provides a transparent and collaborative way to manage tasks, prioritize work and improve efficiency by identifying bottlenecks and reducing waste.

Jira, on the other hand, is a project management tool that supports agile methodologies like Scrum and Kanban. It provides a platform for managing tasks, tracking progress and collaborating with team members. Jira also provides features such as sprint planning, backlog management, and agile reporting that can facilitate the implementation of agile methodologies. By using Kanban and Jira in conjunction with agile methodologies, teams can improve productivity, increase transparency, and deliver high-quality software solutions that meet the changing needs of their customers. By following these steps, a government organization can successfully implement Kanban in Jira for better project management.

Agile project management represents an iterative method for overseeing software development projects, emphasizing ongoing releases and integrating customer input throughout each

cycle. Teams embracing agile project management principles enhance their pace of development, foster collaboration, and improve responsiveness to market shifts. Through the application of these methodologies, agile project management practices are refined and optimized over time.

Kanban serves as a tool for implementing Agile and DevOps principles in software development, offering real-time communication of capacity and complete visibility into work processes. Tasks are depicted visually on a kanban board, enabling team members to track progress effortlessly. While Kanban enjoys widespread adoption among Agile methodologies and DevOps teams today, its work methodology traces back over 50 years.

Today's agile software development teams are able to use the same principles by matching the amount of work in progress (WIP) with the capacities used. Giving the team more flexible planning options, much faster results, and clearer and more transparent representation throughout the development cycle. This is due to the fact that software teams can implement with reduced resources used, streamlining the entire work process, translated virtually into graphical representation.

Kanban boards

Visualizing work and optimizing workflows within team projects are crucial aspects of agile software development. Virtual boards are a key feature in agile tools, providing traceability, facilitating collaboration, and enabling access from various locations. Whether teams are physically co-located or distributed digitally, dashboards serve the purpose of ensuring visibility into the team's work, following a standardized workflow where blockages and dependencies are promptly identified and resolved. A typical kanban board operates with a three-step workflow: To Do, In Progress, and Done. Depending on the team's characteristics and objectives, this workflow can be customized to align with the team's mission. The kanban methodology emphasizes total transparency of work and real-time communication of capabilities, with the kanban board serving as the primary source of truth for the team's accomplishments.

In kanban methodology, each work item is represented as a separate card on the board, embodying the concept of "visual signal" from Japanese. These cards enable team members to visually track the progress of work through its workflow. They contain essential information about the work item, including responsible parties, work descriptions, expected duration, and other pertinent details. Virtual kanban boards often feature additional technical information such as screenshots, aiding in swift identification of roadblocks and dependencies. This approach ensures increased focus, complete traceability, and rapid problem resolution within the team.

Kanban is widely adopted by agile teams due to its numerous benefits for task planning and workflow management. One notable advantage is its planning flexibility, where teams focus solely on actively progressing work items. Upon completing a work item, the next task is pulled from the top of the backlog. Product Owners retain the freedom to reprioritize backlog items without disrupting ongoing work, ensuring continuous delivery of value. Unlike Scrum, kanban does not enforce fixed-length iterations, allowing teams to adapt dynamically to changing priorities and deliver maximum value to the business.

Shortened cycle times

Shortened cycle times are pivotal for kanban teams, measured as the duration from work initiation to shipment. Teams enhance cycle time by leveraging overlapping skill sets, mitigating bottlenecks, and implementing core practices like code reviews and mentoring. Shared skills enable heterogeneous work distribution and facilitate collective problem-solving, leading to smoother processes.

Reducing blockages is another key aspect of kanban, achieved by limiting work in progress (WIP) to minimize context switching and improve focus. Setting WIP limits at each workflow state helps identify bottlenecks and encourages thorough code reviews, ultimately enhancing overall cycle time.

Visual metrics play a vital role in kanban, enabling teams to continuously improve efficiency and effectiveness. Control charts and cumulative flow charts provide insights into workflow bottlenecks and aid in identifying areas for optimization, ensuring a streamlined process.

Continuous Delivery (CD) is integral to modern software development, focusing on frequent releases to customers. Kanban complements CD by emphasizing just-in-time delivery, aligning with the goal of delivering value promptly to customers. Together with Continuous Integration (CI), kanban enables faster and high-quality software delivery, enhancing competitiveness in the market.

Thus, as a strategy, we must maximize efficiency, eliminate waste, remove bottlenecks and ensure efficient delivery flows as business leaders. To ensure consistency, alignment and adaptability in business, various beneficial techniques have been brought back to life through the Agile mindset. The most frequently used agile methodologies, different from traditional project management, are: Kanban; Ash; Extreme Programming (XP); Feature-based development; Crystal methodology.

Lean Agile Mindset - the basis of all agile methodologies

Agile is a set of values and principles first recorded in The Agile Manifesto. It was created as a first response to the methods that penetrated the world of software development, with manifestations of inefficiency and counter-productivity.

Promoting values similar to Lean methods and techniques, Agile mainly focuses on the following key principles: customer satisfaction is paramount; developing projects with inspired collaborators; interactions are best when done in person; software that works is a measure of progress; continually reflect and adapt. The 4 core values of the Agile Manifesto: frequent delivery in value; team collaboration; adaptability to change; collaboration with the client. Nowadays, Kanban has been defined as a complete flow management solution designed to help us visualize work, maximize efficiency and be agile. Kanban focuses on ensuring steady flow efficiency and getting things done continuously, rather than starting new work all the time. The basics of the method can be divided into two sets of Kanban principles and six practices.

Principles of change management	Principles of service delivery
Starting with the present activity	Focus on the needs and expectations of beneficiaries
Acceptance and progressive, evolutionary change	Managing the work, not the workers
Encouraging management acts at all levels	Regularly reviewing the service network

Table 1. Kanban principles and practices, at the level of the Ministry of Investments and European Projects

The 6 practices of Kanban: Workflow visualization; Limitation of works in progress; Flow management; Realization of explicit process policies; Implementation of feedback loops; Collaborative improvement (using models and the scientific method). Unlike other frameworks such as XP and Scrum, Kanban focuses on continuous flow rather than iterations. This means that teams are encouraged to deliver product components as soon as they are ready, making Kanban a highly customized approach. The best way to visualize our work is by creating and using a Kanban

board. The simplest can consist of three columns - "Requested", "In Progress" and "Completed". The board serves as a repository of real-time information, highlighting bottlenecks in the system and anything else that might prevent good work practices.

Kanban principles of change management and service delivery

Every method, framework or behavior that follows these values can be called Agile. Regardless of the Agile approach your team takes - flow-based or iteration-based, the benefits of Agile cannot be fully realized without the commitment of everyone involved. So here are some examples of the most popular Agile methodologies:

Kanban method (Agile or Lean)

Kanban is a workflow method developed by Toyota engineer Taiichi Ohno for Lean manufacturing. Originally designed as a scheduling system, Kanban facilitates production and inventory control. Acclaimed for its ability to produce large quantities of product, Kanban is one of the most important methodologies by which work teams can achieve just-in-time (JIT) production.

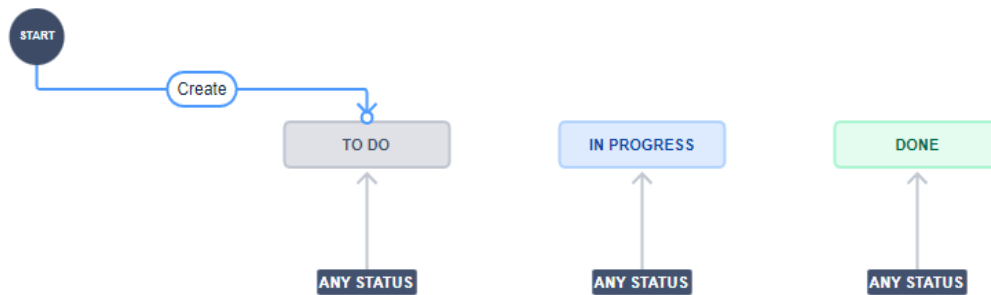


Figure 1. Flow construction stages – JIRA Platform – Kanban Methodology

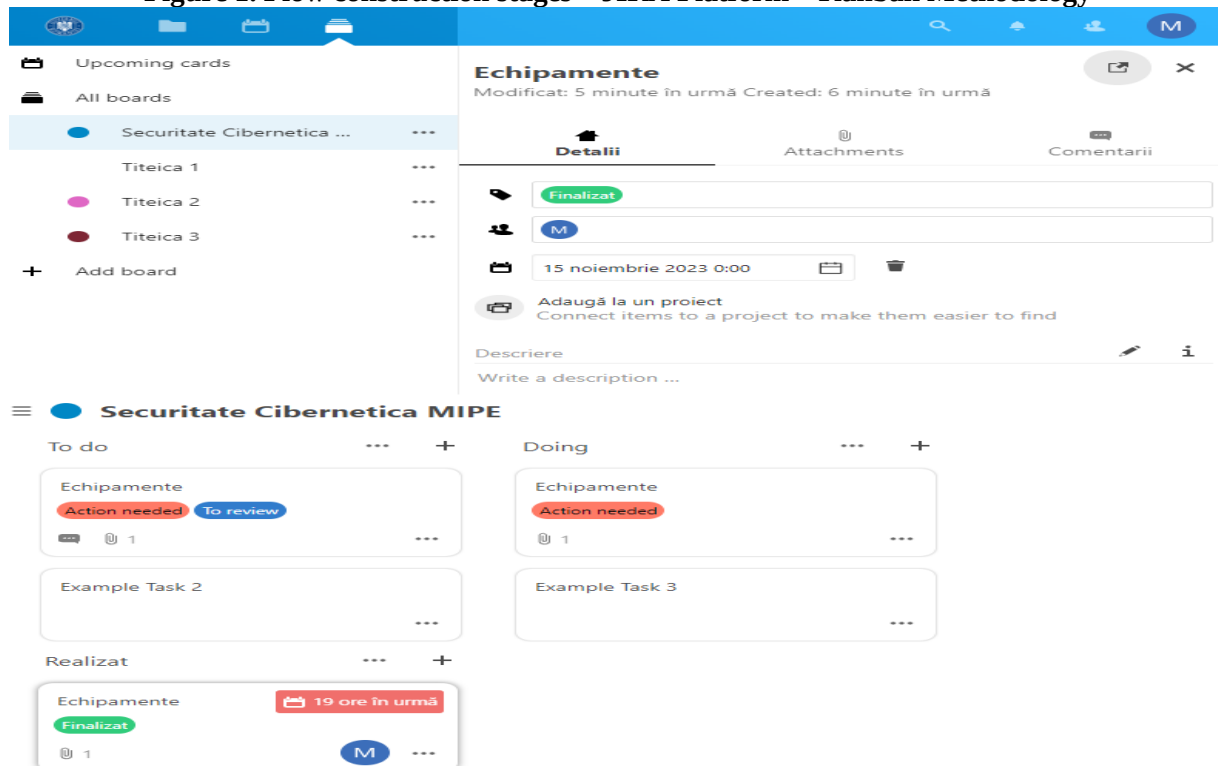


Figure 2. KANBAN DECK - Next Cloud Ministry of Investments and European Projects

SCRUM	KANBAN	
Cadence	Regular sprints of fixed length (ex 2 weeks)	Continuous flow
Launch methodology	At the end of each sprint, if approved by the Product Owner	Continuous delivery or at the discretion of the team
Roles	Product Owner, Scrum Master, Development Team	There are no existing roles. Some teams enlist the help of an agile coach.
Key values	Speed	Cycle time
Change the philosophy	Teams should strive not to make changes to the sprint forecast during the sprint. Doing so compromises estimation learning.	Change can happen at any time

Table 2. Scrum vs. Approaches Kanban, at the level of the Ministry of Investments and European Projects

Establishing a national cyber defense system is crucial for fostering innovation and leveraging emerging technologies in government operations. This initiative aims to streamline processes, particularly in managing European funds, by integrating automation and artificial intelligence to eliminate repetitive tasks and enhance efficiency. Failure to operate at optimal levels, especially in applications related to European fund management, poses a vulnerability, leading to decreased absorption of funds and economic repercussions. This poses a significant threat to Romania's national security, impacting its economic and political obligations as a member of the European Union.

Currently lacking an internal Security Operations Center (SOC), MIPE will utilize machine learning and automated incident investigation to bolster its security measures. By defining integrated and automated response flows, cyber security personnel can effectively mitigate threats and prevent lateral spread of attacks. This approach maximizes immediate response capabilities and provides deep visibility into malicious activities, facilitating accurate incident detection and intelligent automated responses to minimize vulnerabilities.

An integrated device cybersecurity management platform ensures uniform protection across the entire IT environment, mitigating potential vulnerabilities that attackers could exploit. Leveraging event database queries for threat detection and utilizing indicators of compromise (IoC) enable automated investigation and response to cyber security incidents, enhancing overall security posture.

Methodology

The methodology adopted aimed to foster scientific and technological excellence while analyzing the outcomes of intelligent technologies within the central administration. The primary objectives included advancing cyber security and resilience of critical national systems, services, and infrastructure, as well as enhancing cyber security awareness among public administration officials and contractual users. This doctoral research was conducted within the Ministry of European Investments and Projects over two programming periods of non-refundable European funds, spanning from 2013 to 2024.

Three projects, spearheaded by the Romanian Intelligence Service through the National Cyber-int Center, focused on bolstering national cyber security. These initiatives aimed to establish a protective umbrella over critical national infrastructure, leveraging digital transformation driven by emerging technologies. This evolution facilitated e-government transformation and contributed to the development of a secure cyber environment.

As a result of these efforts, positive impacts are anticipated, including increased absorption of European funds in a secure cyber environment. The integration of automatic learning functionalities through artificial intelligence at the Ministry of European Investments and Projects is expected to drive innovation and technology development, ultimately benefiting the national economy.

Through specific instruments of the Ministry of Investments and European Projects and active participation in projects to create critical infrastructure of national importance, as well as in national cyber security exercises, training and awareness measures will be periodically applied regarding cyber security risks and the appropriate measures needed in preventing and countering cyber security incidents:

1. CYBER SECURITY PROJECT 1 – The national system for the protection of IT/C infrastructures of national interest against threats from cyberspace - SMIS code 48723- Sectoral Operational Program "Increasing Economic Competitiveness" "Investments for your future!" – 2013-2015.

2. CYBER SECURITY PROJECT 2 – Updating and developing the national system for the protection of IT&C infrastructures with critical valances for national security against threats from cyberspace, SMIS code –127221, financed in the 2014-2020 programming period from the POC.

3. CYBER SECURITY PROJECT 3 – Investment I12 from PNNR – Ensuring cyber protection for both public and private ICT infrastructures with critical values for national security, through the use of smart technologies.

Participation of the Ministry of Investments and European Projects in CyDEX 20, 21, 22, 23 – the Romanian hands-on cyber security exercise (focused on the practical component) that ensures an advanced level of realism by carrying out activities in a security polygon cyber, having as its main objective the exercise of defense capabilities in the field of cyber security against threats to IT&C infrastructures with critical valances for national security.

Application of AGILE approaches – Kanban method - Management of cyber security assurance projects – Ministry of Investments and European Projects.

The use of intelligent technologies at the level of the Ministry of Investments and European Projects will generate the framework conducive to innovation and development, so necessary for the implementation of the evolving synergy, at the organizational level within the governance activity. The processes specific to the governing act should be treated similar to the stages of business development. Achieving effective results depends on the degree of fulfillment of the project management component.

The digital transformation will be achieved through re-technology projects funded by non-refundable European funds, or defined as a digitalization strategy in the National Recovery and Resilience Plan. Thus, within the framework of the cooperation agreement with the National Cyberint Center, 3 projects were implemented at the level of the Ministry of Investments and European Projects, to develop the existing national IT system and to include in this system new IT&C infrastructures with critical values for national security in order to increase capabilities of identifying cyber-attacks, as well as increasing the level of national cyber security, subordinated to a common EU approach to cyber security.

The third project implemented through PNRR, at the MIPE level, will have the mission of expanding the area of protection of Informational Technology and Operational Technology infrastructures, as a beneficiary entity of cyber protection and security, as well as by participating in training programs organized in the field of cyber security.

For better traceability and organizational efficiency, the stages of the implementation of the projects in question should be transposed into a cooperation platform type information system, so that they can be mirrored in the electronic and digital project management flow, all the activities undertaken, the deadlines, the cyber security incidents, as well as the achievements, which will ultimately define a high degree of fulfillment of the projects' objectives and the realization of a state of balance and assurance of cyber security at the level of the Ministry of Investments and European Projects.

After the installation of the collaborative platform, an Agile methodology will be chosen, with the aim of obtaining a visual transposition of the projects' activities, by reporting the results generated by incidents resolved as a result of the recommendations received from the institutions qualified to carry out analysis activities intelligence, regarding ensuring cyber security at government level. The transposition of the activities in a visual format, within the project management, having the role of effective reporting that can be forwarded to the decision-making invoice, to obtain a better understanding of the results and the impact of the projects at the level of the Ministry of Investments and European Projects. By using the cloud-based Jira platform, it will be possible to use the Agile methodology - using Kanban boards, for the effective definition of project management stages.

The process of installing Jira and configuring a Kanban board for project management involves the following steps: 1. Obtain a Jira license or create a Jira Cloud account; 2. Choose a deployment option: Jira Cloud, Jira Server or Jira Data Center; 3. Install Jira according to your chosen deployment option, following the official documentation provided by Atlassian (Jira manufacturer); 4. After Jira is installed, access the Jira platform through your preferred web browser; 5. A new project will be created and the Kanban project template will be selected; 6. Configure project settings, including project name, project key, and project leader; 7. Customizing Kanban board columns to reflect your agile workflow for managing European funds; 8. Inviting team members and assigning appropriate roles and permissions; 9. Starting to create issues for resolution (tasks, user experiences, etc.) on the Kanban board and moving them through the workflow columns as the work progresses; 10. Using additional Jira features, such as assigning due dates, adding attachments, logically interconnecting issues, and generating reports, to improve project management. (Fig 3. JIRA - Kanban - MIPE automation platform tasks)

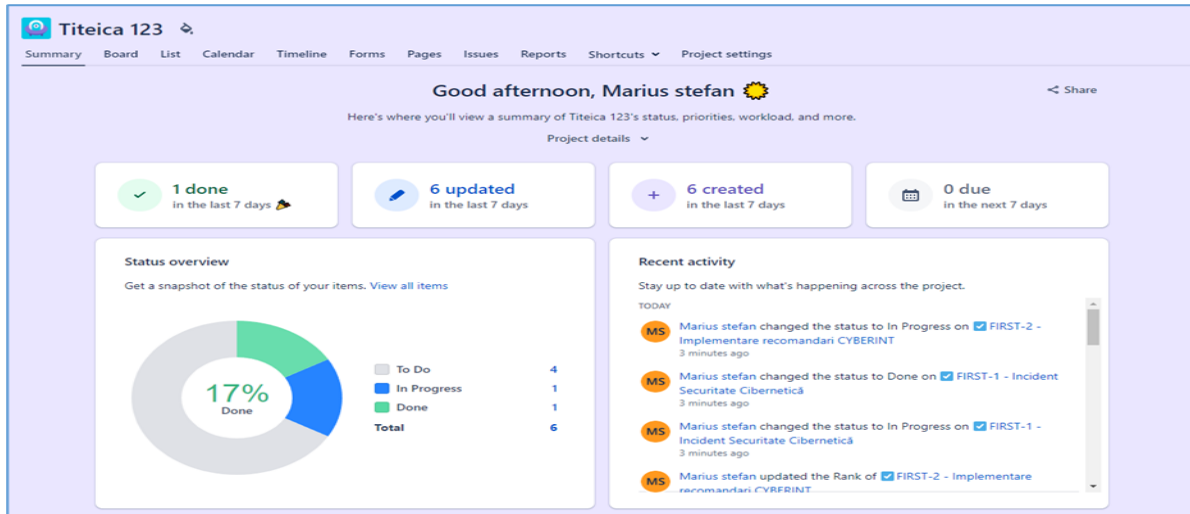


Figure 3. Main dashboard – JIRA - Kanban - MIPE automation platform tasks

Results and discussions

The system is a set of elements (principles, rules, forces, etc.) dependent on each other and forming an organized whole, which puts order in a field of theoretical thinking, regulates the classification of material in a field of natural sciences or acts as a practical activity to function according to the intended purpose.

Any system must meet a number of requirements related to its optimal operation. One cannot imagine a system without putting into play the concept of integration of the parts, but also of control over the behaviors of its members, who must conform to a set of norms and values. The sphere of action of a social system consists of: the human-individual possibilities of action (the physical and mental capacities of the members); the human-collective possibilities of action (the capacity for directed, coordinated action of a large number of people); material and social-institutional tools to act (technologies, social institutions, norms, traditions); the knowledge necessary to carry out that activity, under existing conditions, as well as the ability to create new technical and institutional action tools.

The state is thus defined as a form of political organization of a human community that, through its specialized bodies and legitimately established force, ensures the diffusion of power at different levels of society, in order to coordinate public services, ensure order and develop the community. The state defends and guarantees the territorial integrity and autonomy of the community whose official expression it is.

National security is that state of legality, balance and economic and political stability that guarantees the existence and development of the sovereign, unitary, independent and indivisible state, the maintenance of the rule of law, as well as the climate for the unrestricted exercise of the rights, freedoms and fundamental duties of citizens. At the global level, the security environment is in a continuous transformation, which is mainly reflected in the accentuation of interdependencies and unpredictability in the system of international relations and the difficulty of delimiting classic risks and threats from asymmetric and hybrid ones.

At the level of the single antivirus administration console, a solution belonging to the Ministry of Investments and European Projects, which ensures a high degree of defense against current cyber threats, the MIPE Cyber Security Policies have been applied. The software used is

an integrated platform virtual machine for automated cyber security management of equipment (physical/virtual workstations and servers) used and managed within the organization.

The cyber security equipment used within the organization provides advanced management capabilities, by preventing, detecting and investigating cyber security incidents, by analyzing the risks generated by possible attacks, as well as timely automatic remediation of cyber threats.

As the first measure of protection against cyber-attacks at the level of the organization, it will be aimed at increasing the awareness of the importance of ensuring cyber security, through periodic automated information of users.

Evolving to a different approach, in public administration by introducing the use of emerging technologies, in future strategies, using cloud, on-premises or hybrid cloud solutions, according to available budgets, advantages or disadvantages.

For the fulfillment of a strategy of innovation and development of digitization processes through the use of non-refundable funds related to the National Recovery and Resilience Plan, as a result of the integration of machine learning and artificial intelligence functionalities, at the level of the Ministry of Investments and European Projects.

The integration of machine learning and artificial intelligence functionalities, at the level of the Ministry of Investments and European Project is administered centrally through the cyber security command center – Figure 3. cyber security command center. The results of the abilities used can be observed in Table 3 below, while the use of intelligent technologies such as Sandbox Analyzer and EDR - Endpoint Threat Detection and Response (ETDR) can be seen in Figures 6 and 8 below, and Computers – Malware Status in Figure 7, Cyber Security BASELINE- Figure 5.

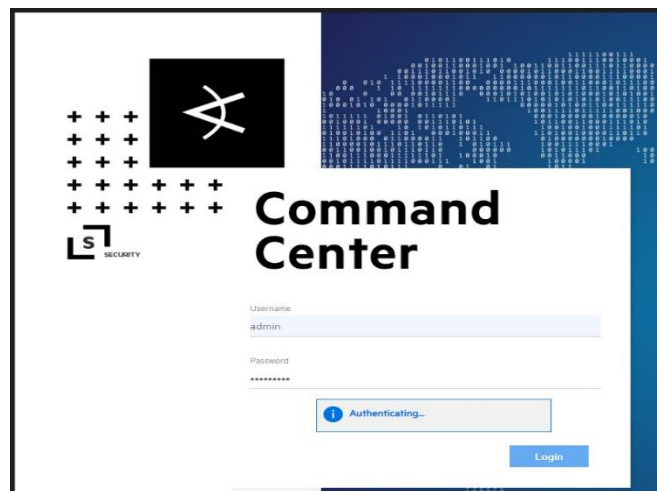


Figure 4. Cyber Security Command Center – Ministry of European Investments and Projects

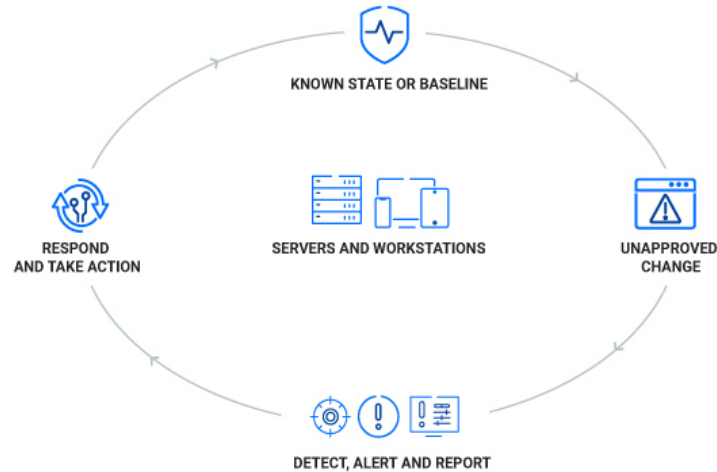


Figure 5. Cyber Security BASELINE - Ministry of European Investments and Projects

Source: www.bitdefender.com.

Table 3. Results of Integrating Machine Learning and Artificial Intelligence functionalities, at the level of the Ministry of European Investments and Projects

Implementation period	Protected workstations	Increasing the degree of cyber protection	Automate responses to detected and remedied cyber attacks	Fixed vulnerabilities	Possible security risks
Cyber Security Project 1 2014-2017	250 to 450	200 Endpoints	About 50%	75%	25%
Cyber Security Project 2 2020-2023	450 to 1700	1250 Endpoints	About 75%	90%	10%
Cyber Security Project 3 2024-2027	1700 to 3400	2500 Endpoints	About 95%	95%	5%

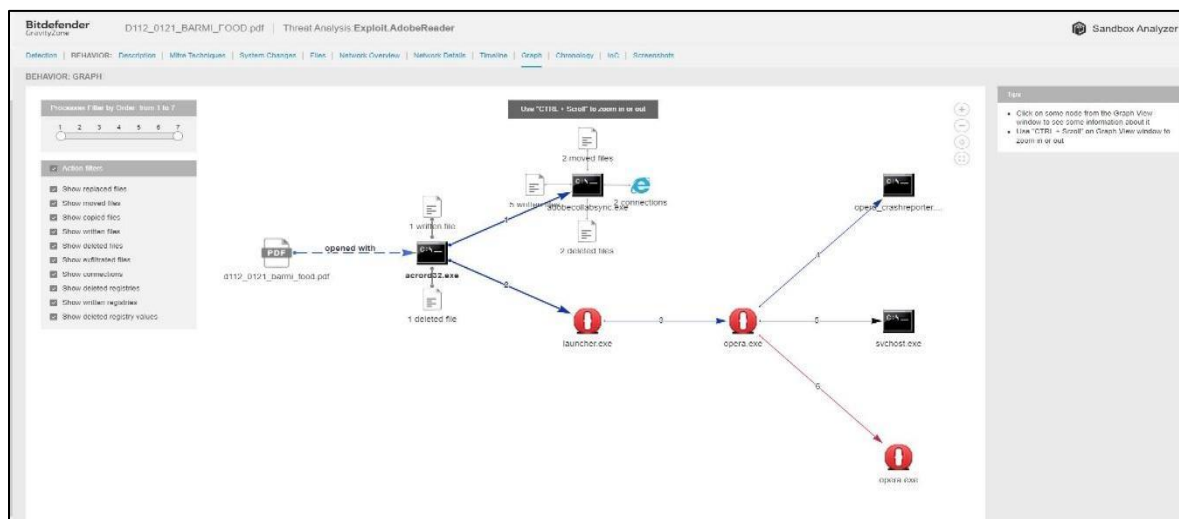
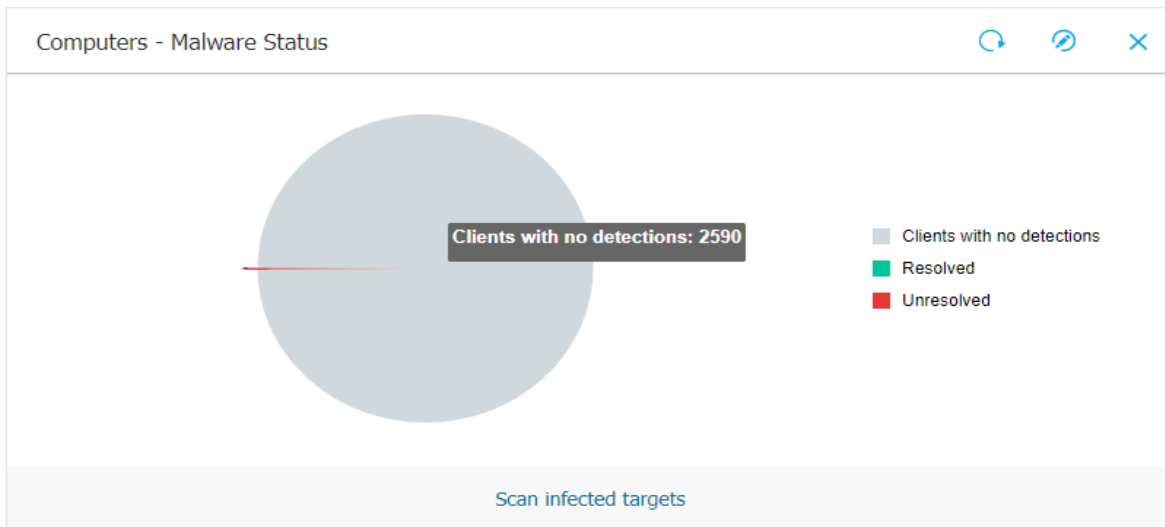


Figure 6. Sandbox Analyzer

Source: www.bitdefender.com.

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Figure 7. Computers – Malware Status

Source: www.bitdefender.com.

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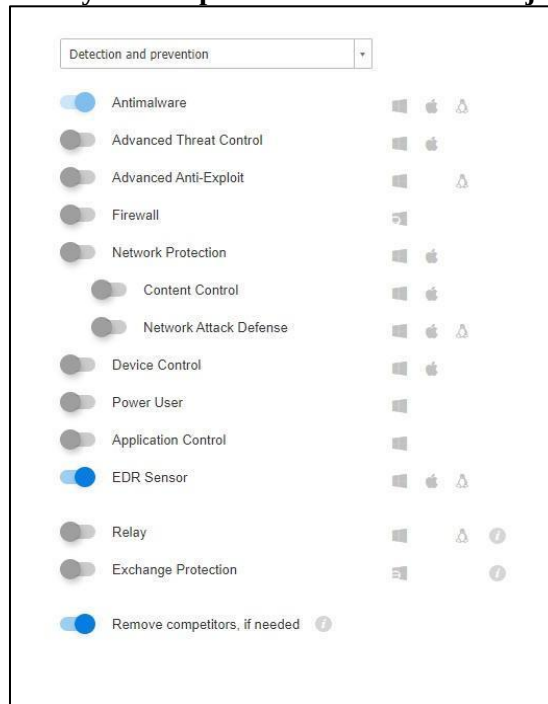


Figure 8. Endpoint Threat Detection and Response (ETDR) – Ministry of European Investments and Projects

Source: www.bitdefender.com.

Conclusions

Cyber security solutions bring real benefits to the institution when they are configured and used in accordance with current standards and best practices in ensuring cyber security. By using intuitive, easy-to-configure management tools, the time required to implement new policies can be optimized for proper incident monitoring and alerting.

The collaboration with the Romanian Information Service, through the National Cyberint Center, provides the organization with stability and access to the necessary knowledge in the activity of implementing these automated systems for ensuring the state of equilibrium specific to cyber security.

Through non-reimbursable European funding specific to European programs, the necessary stability will be created and maintained, especially in critical areas of the national economy, such as the area of absorption of European funds, which conditions the budget allocated to innovation in public administration.

In industry and at the level of organizations, technologies will increase considerably: the role of robotics and automation by eliminating repetitive processes. The economy and society will undergo radical transformations, which will influence the existence of modern man.

Regarding the need to ensure cyber defense, from the national level to the organizational-individual level, the revolution in the use of emerging technologies produces both benefits and vulnerabilities, threats and risks, especially in the cyber virtual space.

The reinvention of governance and the computerization of public administration requires the creation of a parallel virtual environment, characterized by the protection of information of state interest, in a balanced secure environment, necessary, including for citizens.

The consequences of competition in innovation generate major transformations through interoperability and the synergies created, including at the level of society, simplifying the timeless life of the modern individual in the era of the information society.

The specific national strategic areas, such as the attraction and absorption of non-reimbursable European funds, by ensuring cyber security, aim at the modernization and computerization of the public administration infrastructure in Romania, constituting a real national interest for the evolution of the government towards innovation. Thus creating a global framework of cyber security, balance and trust in ICT, with an expansive-progressive tendency to automate repetitive processes, which will generate the achievement of maximum efficiency.

The efficient management of the infrastructure and applications intended for the management of non-reimbursable European funds, of particular importance in the evolutionary process of increasing the quality of life, is the first step towards knowledge, innovation and the development of society in the digital-information age.

The innovative strategic objectives achieved, aim to create scientific excellence and technological ubiquity, by obtaining advantages in innovation through cyber security and the resilience of IT systems, services and critical infrastructure of national importance, as well as increasing the degree of culture of awareness of the importance of ensuring security among local and central public administration officials.

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