The final report of the CyberBOX project (part 1)

Why do we need CyberBOX?

(CyberBOX project on the CZECH.UP JukeBOX platform)

Project duration: 1.10.2022 – 30.9.2023

Project team: The project was created by CZECH.UP, an innovation association, which invited NARA-SK and EPMA to collaborate on the project on the CZECH.UP JukeBOX platform.


This report will gradually have multiple parts, which will be created or supplemented as the materials are released by partners for CZECH.UP, particularly by the partner EPMA.

We will now focus on the reasons for the project's creation, the partnership consortium, and the utilization of the project's outcomes.

A. Summary of Part 1 of the Final Report:

a. The CyberBOX project followed the previous GameBOX project, both created by CZECH.UP, who invited partners to collaborate on their own CZECH.UP JukeBOX platform based on recommendations from significant authorities with whom they cooperated (on both the Czech and Slovak sides).

b. The primary goal of both projects was to learn to create digital courses (educational objects for digital education modeling) in collaboration with partners. Panatec, as a member of CZECH.UP, provided the platform, eliminating the need to develop any software, allowing the teams to focus on digitizing tasks and situations, creating educational experiential courses.

c. It was clarified that the projects aimed to create "training," not a "game," as a "game" is a recreational matter that does not require working with reality. Additionally, the projects did not involve programming software as a program, but rather the creation of a digitalized structure of gamification elements. For example, the teams did not program MS Excel but created structured data tables in Excel.

d. The second goal was to establish functional national communities guided by certified methodologies. It was recognized that digital experiential courses are organisms that evolve and adapt to ongoing needs. Besides the public "Live" instance, other instances are managed by specific communities.

e. The CZECH.UP JukeBOX platform includes functionalities to support:
    I. Management of visuals (If you see any other designation than CZECH.UP, CyberBOX, GameBOX, or JukeBOX, then they are unauthorized texts and are not related to the projects.)
    II. Course launching and creation, APIs (e.g., for dynamic translations)
    III. Team management and communication, volunteerism of the association, student and foreigner practices
    IV. Certification authority, certifying internal objects and mediating external certifications
    V. Project management and document management, project management utilizing quality management
    VI. Public communication and community public communication (e.g., https://CyberBOX.CZECH-UP.cz)

f. Both the GameBOX and CyberBOX projects were successfully completed by the partners according to plan and in high quality, with special thanks to the experienced and high-quality team of NARA-SK and CZECH.UP.
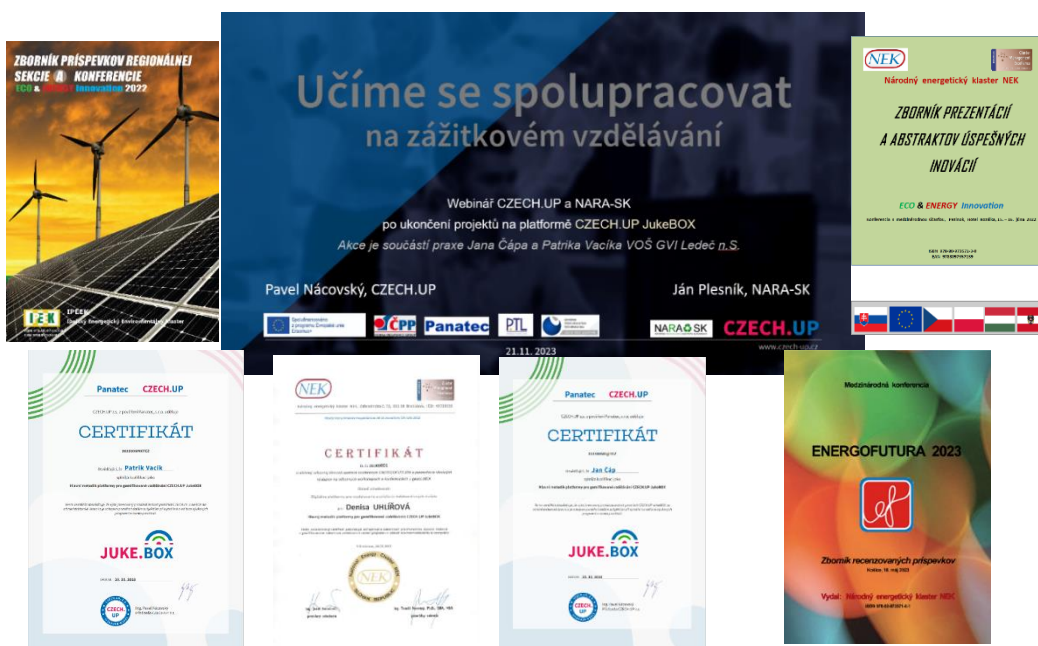
B. The Story of the Gamified Digital Experiential Education Object CyberBOX

Description of the CyberBOX Gamification Story

a. **In each training session, you will face 5 weeks in which you will strive to navigate through without falling victim to the cybersecurity risks around us. Each week in the training corresponds to one round.**

b. **Every week, there may be one risk (a situation that comes "randomly") and one task. The first task is to acquire a phone or notebook so that the gamification has some meaning.**

c. **Your reactions to navigate through the training are available on the left side. These include responses that may or may not directly impact the training but are still part of life.**

d. **Clicking the "Next Step" button advances the training by one week.**

e. **At the top left, you can monitor your success in resisting attacks, which is the main and only evaluation criterion. Assets at the top only indicate whether you can make a choice of your reaction or if you still need to make efforts to take action.**

f. **At the end of the training, you will receive a summary of information about the training you just completed.**

g. Courses on the JukeBOX platform assume that you will go through them multiple times. You can use information and guides here on the portal. However, we highly recommend that you start utilizing the experiences of our national communities, which are guided by national methodologies. No one other than a certified methodologist and author is authorized to present, offer, and support courses on the CZECH.UP JukeBOX platform, including CyberBOX. We strive to ensure maximum quality, experience, and sustainability of our offering for you.

h. Once you are confident with Level 1 of this course, you can move on to higher levels (when available) or even participate in their preparation. That's where you can learn the most.

C. Formation of the Project

Between 2018 and 2021, CZECH.UP worked on projects focused on strategic territorial planning and the creation of digital maps for modeling public services. In connection with these projects, the organization actively employed the principles of digital modeling and developed some platforms (procedures based on supporting digital tools).

Members and partners of CZECH.UP are individuals who have decided to join forces and collectively create significant activities. Individual partners have experience with dozens of national and European projects of various types, and senior members typically have over 20 years of expert practice. The team includes colleagues with several "major" doctorates and others who have received significant work awards, such as the national Personality of eGovernment Award in the Czech Republic. The competence and real references of the organization can be derived from the competencies of specific team members and the organizations in which they are or have been active. And it is extraordinary.

In line with these activities, we increasingly realized the need to focus more rigorously on new forms of education, particularly those that align with the needs of digital models, especially ISO/ČSN/EN 15221 on facility management and Building Information Modeling (BIM) systems.

During this period, we collaborated on projects with the Ministry of Foreign Affairs of the Slovak Republic, the Ministry of Economy, the SARIO agency, and the Slovak Embassy in Prague. Some projects and recommendations for significant personalities and partners in Slovakia emerged from this collaboration. Among them, NARA-SK and specifically Ing. Ján Plesník were highlighted. We verified the high competence and innovative approach of NARA-SK and offered participation in the project.

Simultaneously, during discussions with the Department of Informatics of the Vysočina Region, we received a recommendation for their organization, EPMA. I was familiar with EPMA from the time when it was led by Dr. Irina Zálišová, as an expert organization for subsidy management.

CZECH.UP prepared the project together with the GameBOX project on the same platform and in the same logic, contracting EPMA and cowork PONK from Žilina. This decision was also influenced by the aforementioned recommendations from Slovakia.

The start of the projects was deliberately postponed by 9 months so that we could learn from the first project in the second one. GameBOX ran from January 1, 2022, to December 31, 2022, and CyberBOX from October 1, 2022, to September 30, 2023.

Both projects shared the logic of using the CZECH.UP JukeBOX software platform owned by Panatec s.r.o. Panatec contributed it to the CZECH.UP organization with conditions of sustainability and non-transferability. It includes all necessary support services, not just course launch services.

This phase concluded with CZECH.UP submitting Erasmus+ applications for both projects, CyberBOX and GameBOX, finalized by EPMA.

D. What the Project Brought

Experiences and Notes from the CyberBOX Project:

a. The quality management system used in the CZECH.UP JukeBOX platform proved to be very effective. It is based on a control document that defines the Acceptance Document for each activity. During the project, it was discovered that a large number of activities presented a complication, and in subsequent projects, the structure was optimized. The content of each Acceptance Document clearly defines the output of the activity, and all Acceptance Documents are accepted in the final overall Acceptance Document of the project. This allowed for effective crisis management and the takeover of tasks from an inactive partner.

b. There were initial concerns about whether there would be interest in reviewing, providing feedback on the course, and collaborating on its implementation. However, the reality exceeded expectations. Communities gradually emerged in Slovakia, the Czech Republic, Ukraine (for Ukrainian and Russian), Poland, and other countries are gradually expressing interest in support (HU, AUS, DE, ESP, …). Chinese (for testing automatically translated text in a different language system) was also included in the offering, resulting in individuals from Taiwan and China showing interest (primarily for technical testing).

c. Working with communities means that the course exists simultaneously in multiple forms - instances (each community has 1-2 instances, development and testing environments, and a public "Live" instance). This organizational complexity led to the creation of positions for national certified methodologists concentrated in the Platform Methodology Team. This also necessitated the establishment of the Certification Authority Panatec – CZECH.UP, managing its own authority and providing external certifications (e.g., this year in collaboration with the National Energy Cluster of Slovakia). There is interest in using this Certification Authority for other partners and projects, including providing suitable certification authorities for specific cases.

d. Communities now fully "manage" how individual instances of the CyberBOX training (and others) are configured. They utilize the ease of scaling difficulty when starting to use a specific instance (including the public Live instance) for specific purposes. Here, the recommendations of innovative educators met the requirements of the student community, emphasizing the need to set zero difficulty in the initial stages to allow users to navigate the training. This is followed by the gradual introduction of gamification logic for users to become familiar with it. Thus, CyberBOX is currently in Stage 1-2, where trainees are repeatedly prompted to acquire 5-7 security elements of various categories, and tasks are directly controlled. This approach has proven suitable for all target groups, including seniors. Advanced logic hiding features will be removed in the next stage. Stage 3 has been tested within the project, but it has not been activated in the Live instance during sustainability. This will be done later based on community agreement. Staging helps attract clients to see what's new in JukeBOX. Stage 4 is specifically designed for hackathons.

e. Allowing communities to use the live version of the CyberBOX training enabled other interested parties to encounter the education on "How to create digital experiential courses effectively." This approach fully opened up after the international conference in spring 2023 in Košice, attended by representatives of the Slovak government and the European education system. Here, real agile education suitable for primary, secondary, and tertiary schools and lifelong learning, fully digitized and working with models, was demonstrated. Simultaneously, various specializations can be taught, providing experience in working within a holistic team. In the CyberBOX project, individuals from CZECH.UP and NARA-SK, experts and methodologists in experiential education, communication of this training on social networks, digitization of education, testing, community management, creation of visuals and optical identification markers, project management, and grant administration are involved.

f. This approach necessitated collaboration with exceptional personalities and experts, advancing the project further. On the other hand, the project did not support the use of many short expert activities, and legally addressing this situation was very challenging. This was addressed beyond the project through the contribution of CZECH.UP and NARA-SK, or through voluntary work. However, it represented a significant shift for the project.

g. For those of us accustomed to the traditional system of "copying from a book or board to a notebook and memorizing this content," dealing with the modern agile education system, including microlearning with a methodologist-pedagogue-guide, was a challenge. We see how motivation and trust in accepting knowledge based on positive recommendations from authorities and friends work. Conversely, the attempt to promote an encyclopedic approach does not fit, especially in the dynamic environment of cybersecurity, which changes almost daily. It is necessary to have solid competence built on fundamental knowledge. The 5-7 tasks cover about 90% of risks, and they can be quickly acquired by many target groups. Acquiring competence for the remaining 5% requires deep user knowledge, and the last 5% can only be covered by specialized experts with ongoing education. Therefore, in the CyberBOX course (built at Level 1 - basic entry-level knowledge), the need to take seriously those 5-7 tasks, gradually introduced with increasing difficulty (related to the knowledge of using the specific front-end), is emphasized. Note: Higher-level training (beyond the level of our Erasmus+ project) is already emerging and being tested within communities. Here we see that the project had the significance we expected from it.

h. Digital technologies have specific operations: they require service and support, system capacity management, technical maintenance, and they have planned (and unplanned) life cycles. Sustainability of a specific course is also determined by these cycles. This does not mean that after 2 years (project + year), the course ceases to exist. Instead, it is innovated along with the platform and the entire family of courses, updating its content in relation to the matrix of all courses. Responses to community needs are also essential. Especially in student communities, rapid turnover is expected, and every year, communities are built anew. This is another function of the Team of Methodologists, whose task is also to care for the permanent core of these communities.

i. Currently, Fridays are designated as technical days when instances are moved among themselves, and backups and testing take place. Therefore, the training may be temporarily unavailable or even unstable.

Every user must re-register for a specific course once a month. This ensures that there is always an up-to-date portfolio of users for specific instances of specific courses. Usually, trainees move on to other courses and often begin to actively engage in communities.

j. In conclusion, a few statistics as of November 2023: within the communities - on their instances - 96% of enthusiasts are currently accessing, and only 4% are new enthusiasts who register directly through the public website (Live instance). Of these 4%, then 60% further engage through communities for additional collaboration. Some individuals just want to "touch" the community and do not proceed.

Overall, among those who do not continue, 90% attribute it to the still limited course offerings. This is why, as part of collaboration with partners from Slovakia, Greece, and Spain, we have submitted applications for additional Erasmus projects (Danube Interreg, Horizon, ...). Primarily, we aim to actively involve these national communities. In the case of the Czech Republic and Slovakia, we know that communities must be renewed as students "are getting old quickly."

The goal is to create broader teams whose members can independently create courses or even train other partners with the support of methodologists. Our focus is not on promoting JukeBOX, but we are working on integrating other existing platforms and systems.

The core spectrum for course content is based on the Strategy 2030 and its 17 segments. Technical aspects, common to all, stand out separately.

One of the tasks we receive from the community is to stop generating accompanying texts and focus on making the courses themselves intuitive. I hope we won't disrupt this too much.

The actual use of the platform allowed for efficient work according to a predefined and refined scenario with digital process support. Teams could thus concentrate on the processes of their own education, sharing competencies and experiences, and communicating with communities and the public.

By allowing every worker who wanted to participate in the project to become acquainted with the reactions of community members or the professional public, we also achieved the building of trust in collaborative work and the willingness to share it. Especially for the target group of young people, it is important for their work in the community to be perceived as TRENDY or COOL. Transparent rules of collaboration are also crucial.

E. What's next?

We continue to leverage our open communication, which has allowed us to present the possibilities of digital competency development management modeling to organizations, representatives of the educational system, and local governments. We have initiated collaborations with regional clusters and other cooperating structures at the national and European levels.

Partners are interested in details related to the use of the platform in Erasmus+, Horizon, Interreg Danube projects, and representatives of companies and other organizations are exploring the platform's potential for their projects and students in the Czech Republic, Slovakia, Spain, Italy, and other countries. Some applications have already been submitted.

F. Acknowledgment

Here, I would like to express my gratitude to all the individuals listed below who actively contributed to the project, whether as team members or volunteers (or in both capacities). They are further recognized and will be featured in the CyberBOX course under the "Course Information" section. Special thanks go to Ing. Josef Handl, MSc. If additional individuals provide evidence of their active work on the course and fulfill their commitments to partners, this list will be updated – we have already requested this from EPMA and its founder, the Vysočina Region.

About the CyberBOX project on the platform CZECH.UP JukeBOX: | **Version: 001/Live/2023**

The team that created the CyberBOX course:

Project management:

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Ing. Ján Plesník (NARA-SK), Project Manager, Head of Project Crisis Management

The following also worked on the project:

CZECH.UP

Ing. Vladimír Němec - Head of the LP Digitization Team for JukeBOX
PhDr. Ing. Vít Skála, Ph.D. - Head of the Communication and Media Expertise Team
Denisa Uhlířová - Chief Certified Methodologist of the Platform CZECH.UP JukeBOX 2023
The CZECH. UP certifications are here: https://cyberbox.czech-up.cz/vystupy-a-materialy/

Jan Čáp, Monika Kyslíková, Mgr. Lenka Nácovská, Eliana Němcová, Zdeňka Olišarová, Hana Skálová, Yura Sika, Zsanett Sika, Ing. Kseniia Skrypnyk, Patrik Vacík and others.

NARA SK
NÁRODNÁ RECYKLAČNÁ AGENTÚRA SLOVENSKO

Bc. Denisa Záchenská – the main certified methodologist of the Platform CZECH.UP JukeBOX 2023 Sk
Bc. William Parkányi – Team Support and Testing
The project was also supported in some way, in compliance with Erasmus+ rules, by: