## Open Badges – an innovative tool for validation of competences in organizations

Open Badges – innowacyjne narzędzie do walidacji kompetencji w organizacjach

Key words: Open Badges, microcredentials, e-portfolio, validation of competences.

Slowa kluczowe: Otwarte Identyfikatory Kompetencji (Open Badges), mikropoświadczenia, e-portfolio, walidacja kompetencji.

**Streszczenie.** Przedstawiono możliwości wykorzystania Otwartych Identyfikatorów Kompetencji (Open Badges) do poświadczania i walidacji osiągnięć edukacyjnych i zawodowych osób dorosłych przez organizacje publiczne, prywatne oraz pozarządowe. Identyfikator jest cyfrowym znakiem graficznym, który zawiera i daje wirtualny dostęp do opisu osiągnięć edukacyjnych oraz zawodowych jego posiadacza. Wydawca Identyfikatora jest instytucją poświadczającą fakt uzyskania opisywanych kompetencji. Posiadacze Identyfikatorów mają możliwość upublicznienia ich w sieci, gdzie interesariusze mogą się z nimi zapoznawać. Od strony technologicznej umożliwia to internetowa infrastruktura opracowana przez Mozillę i udostępniona na zasadzie open source.

The construction of the Open Badge. Technology and infrastructure of Open Badges, which was founded in 2011–2013 with the participation of the McArthur Foundation and Mozilla Foundation, supports the identification, documentation and validation of educational and professional achievement in virtual environment. An Open Badge, is an open technical standard created by Mozilla for describing skills and achievements accompanied by their visual representation. They are used to set goals, motivate, recognise skills/competences and present a variety of achievements in a variety of contexts. Open Badges are digital records that allow to track the history of their awarding. Therefore, it is possible to identify who awarded the badge, what the achievements were for which the recipient has received it. The Open Badge concept has evolved into a digital record of verified skills and competences, easy to present on the Internet, which contains metadata describing the person/institution/community awarding the badge, the criteria under which it was issued, and the evidence of meeting these criteria. Such form of data record allows users to present any compilation of their skills and competences in a structured format that is a characteristic feature of an Open Badge (Fig. 1).

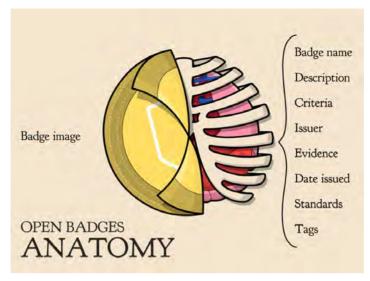


Fig. 1. Data embedded in an Open Badge

Source: https://wiki.mozilla.org/Badges/FAQs [access: 12.07.2016].

**Open badges for public sector. The national system of qualifications** / **professional skills.** National Qualifications Systems generally use two main instruments integrating system qualification: National Qualifications Framework and the National Register of Qualifications. When we refer the National Qualifications Framework to the European Qualifications Framework (eight levels) it facilitates international comparison and recognition of certificates and diplomas. The task of the National Qualifications Register is to catalogue certificates and diplomas issued in the country, in at least three categories:

- 1) qualifications broadcast in the school system and in higher education;
- 2) qualification regulated outside the education system and higher education;
- 3) qualifications not regulated.

Open Badges can be issued in each of the above categories. In category 1. and 2. Open Badges will act as a "supplement" to the certificate and diploma, but the biggest role to play they have in the third category, containing the qualifications market, where they represent qualifications issued in non–formal and competencies acquired in an informal way. Depending on national arrangements, the standard description of a single Open Badge can be supplemented with the information necessary to place it in the Register of Qualifications, in particular in terms of reference to the level of the National and European Qualification Framework, which determines the managing Registry. In this way, you can turn on the system Open Badges to the National Qualifications System.

**Open badges in support of public social assistance**. Professional and social rehabilitation and employment of persons with disabilities. Technology and

infrastructure of Open Badges can play an important role in the vocational and social rehabilitation and employment of disabled persons. Vocational rehabilitation of disabled people is to prepare people with disabilities to obtain employment and work. As part of the vocational rehabilitation undertaken a number of actions that are designed to help people with disabilities return to the labour market. This way, they are also entered numerous amenities and tax relief because of employment of persons with disabilities, and also workshops are appointed for these people. Among people with disabilities is a lot of highly skilled workers who are ambitious, conscientious and hardworking. For many of them participation in typical educational activities is difficult or impossible.

The problem, which often meets people with disabilities is to find suitable jobs. Not everyone is able to cope with it alone. So, for many people with disabilities the opportunity to create employment are sheltered workshops and establishments of professional activity. With state aid to sheltered workshops, causes most active unions with disabilities is working in these places. The purpose of establishments of professional activity is professional and social rehabilitation of people with disabilities in an able-bodied workers. These are entities created mostly by the local government. Sheltered workshops and establishments of professional activity are places where it is possible to successfully develop a system Open Badges in the service of integration of people with disabilities with the rest of society. But the most important effect will be an increase in self-esteem of the disabled person, increase motivation to work and life based on their own strength.

The Open Badges in workplaces employing people with disabilities can certainly count on the financial support of the state as an important element of social and vocational rehabilitation.

*Professional and social rehabilitation of prisoners.* In every free market economy affected by the problem of unemployment it is difficult to provide prisoners with useful work and one which will be at least minimally profitable. Economically inefficient or very low profitable work undermines morale and the sense of work itself as a factor of social and vocational rehabilitation for convicted. Among the prisoners there is unemployment, despite the fact that the personnel of the prison is trying to look for partners in companies and encourage convicts to organize in penitentiaries cooperative work. Report on the situation in the prison system in the countries of Central and Eastern Europe<sup>1</sup> pointed to the directions of action to counteract unemployment among the prisoners. The following are the actions that the system Open Badges can potentially support:

- 1) adapt the profile of production to sales opportunities, taking into account the limitations of the characteristics of prison labour;
- 2) organizing production ventures with the participation of entities outside the prison;
- 3) organizing employment for convicted people on the basis of agreements with third parties;
- 4) granting permits for prisoners to set up their own businesses.

<sup>&</sup>lt;sup>1</sup> Roy Walmsley, Development in the Prison Systems of Central and Eastern Europe, The Institute for Crime Prevention and Control affiliated with the United Nations, Helsinki 1995, HEUNI Paper No. 4, p. 27.

Open Badges in the vocational and social rehabilitation of prisoners could play a key role, as it provides not only the motivation to work in conditions of relative isolation, but also because after serving a sentence confirmation of competence in the form of Open Badges retain its universal and credible character, which may make it easier to find work and return to society.

**Open Badges for uniformed services**. Reconversion help and retraining, in the sense associated with the uniformed services (army, police, prison service, fire brigade, Customs and others), is the aid granted to redundant officers or departing for an early retirement. Competencies and qualifications held by those officers are often not particularly sought in the labour market, and specific habits acquired during years of service, can make a civilian job situation even worse. Former officers are a very large group of people in the so-called productive age. Therefore, the legislative authorities in individual countries, in order to meet the expectations of officers, take action to develop a solution to exploit this potential. For example, officers can use the help in retraining (qualification courses, internships and apprenticeships, other forms of training), career counselling and placement services provided by the institutions that have permission for those kind of vocational activities.

The authentication of a acquired during service former officer skills, using the Open Badges system, by a competent unit of the uniformed services, would create a professional profile with great potential, clear and credible for civilian employers, increasing the chances of employment.

**Open badges for private companies. Human resources development and recruitment process.** In area of personnel management or recruitment process Open Badges can be used in:

- system of motivation badges may be granted e.g. for their participation in projects implemented in the company innovation, commitment to the promotion of business, special contribution to the development of contacts with customers, successful sales, success in the management, team building, etc. Earning badges can positively motivate workers, and collection of badges may be the reason to build pride and self-esteem raising good titleholders. It not without significance is the potential influence of badges to build a good atmosphere and healthy competition and reduce the incidence of burnout. For your benefit will increase efficiency, building transparency in rewarding achievements illustrate badges employees and employee development. In motivating employees to become increasingly important gamification technique, which are inspired by computer role-playing games. The technique is based on achieving the satisfaction of overcoming challenges, to participate in the competition, being a leader, to participate in fruitful cooperation;
- assessment system of employees, promotion and salaries badges can be used for planning career paths and careers in the company, in conjunction with steps professional advancement, commissions and salaries;
- *internal training system* analysis badges allow workers to detect "skills gaps" and preparing the internal training dedicated to specific needs of employees in connection with their duties and functions performed in the company;

- knowledge and competences management system encouraging employees to display badges on their internal corporate profiles (intranet) will identify areas of knowledge and competence in the company. Information about the competence of employees obtained in the company and outside the company, will allow to optimize the allocation of projects, tasks and professional roles and to build teams of diverse but complementary competencies;
- recruitment process Open Badges can be very helpful in the recruitment process. They
  facilitate contact between employers and employees because of its transparency. They
  also show all aspects of the employee professional life and life experience so that they
  give a complete picture of the skills and any other educational achievements of a person.
  Traditional methods of presenting educational attainment and professional are not as user
  friendly as Open Badges.

**Brand development/reputation**. In politics of brand development, ecosystem Open Badges can be used to:

- gain recognition for the efforts of employees there are badges for organizations particularly conscious workers (e.g. the British sign "Investor in People"), increasing the chances of an organization to attract and recruit individuals with greater powers than competitors.
- gain recognition for economic performance organizations and enterprises receive badges for results in business (e.g. the sign "Poland Now"), which proves their market position and competitiveness.
- gain recognition for his contribution to culture, society, the environment and safety e.g. badge "Merit for the Protection of Human Rights" was established by Decree of the President of the Republic of Poland of 2 November 2009. As honourable mention and can be transmitted to citizens of the Republic of Polish, citizens of foreign states, organizations or institutions established on Polish territory or abroad, for special achievements in the field of human rights protection.
- gain recognition for lifetime achievements e.g. The Plaque of Honour Griffin West Pomeranian suitable individuals, local government units, NGOs, legal persons and organizational units not having legal personality which all activities of the professional, social and public or carrying out its tasks for the Region West-Pomeranian remarkably contributed to the economic, cultural and social development of Western Pomerania.

**Building a network of cooperation**. Networks linking organizations and enterprises contributes to increase opportunities to share knowledge and information, allow for mutual learning and are an important source of innovation. On the one hand we can speak about companies using various networking within the framework of cooperation with the manufacturing processes, services or trade, on the other – for local and regional network systems created by organizations and enterprises, and supported by public institutions for the common good.

In both cases, the networking with mutual issuing and recognition Open Badges can reduce the phenomenon of fragmentation and duplication of issued badges. Network badges will increase the transparency of competences occurring in the area of network cooperation, and employees of these organizations and companies will have an easier way to develop their skills and career paths and vocational education. Network partners may choose to establish a common Open Badges, not associated with the brands of individual institutions constituting the network, but the brand itself Networks. As a result, there could be space occupational and educational mobility characterized by a high degree of flexibility movement of people and resources. Networking in the application of the ecosystem Open Badge, even though it may meet with resistance organizations who are afraid of losing their own brand or support and legitimacy of competing organizations through partnership on the same network, and do not want to share their own know-how, poses obvious advantages for themselves organizations, their customers, the public administration and social partner.

There are a variety of objectives and solutions in the creation and functioning of the networks. We can spot the differences depending on what facilities they create and for what purpose. These may include: the territorial network; cooperation networks; network services; branch network; targeted networks; educational networks; project network, etc.

In practice there may be cases where the network having the features of more than one type. It also happens that networks evolve and eventually converted into other networks. In this case, increase the repertoire of the Open Badges issued within the network.

**New business models creation/support of innovation in companies.** Employers implementing the Open Badge System provide stimulus to incentivize continuous improvement of skills of its staff. Personal development of each employee becomes real through the acquisition of various Open Badges for professional and other achievements. Moreover, Open Badge system can be used to promote the company, build and present its current level of the intellectual potential. Dissemination the badges also allows organisations to create new business models. This can be done by increasing the company's presence in the virtual space especially the place where meets employers, employees and other stakeholders of specific sector in which the organization operates.

The use of Open Badges can not only gain recognition among workers, but can also increase the market competitiveness of the company. Each badge issued by the company gives new opportunities acquire customers and creates new connections between the company and its potential clients and future collaborators. Importantly, this mechanism is working even if the employee changes the jobs. The connection between confirmed by the employer work skills using the Open Badges works to the advantage of always and everywhere when an employee uses his badges. This helps to build a good business reputation and gaining more potential customers.

**Open Badges for third sector organisations. Local groups.** The use of Open Badges leads to the decentralization of validation and recognition of professional competence. Perhaps this is the first effective tool for non-formal, open acknowledgment educational achievements. This method is particularly suited to the development of local learning environments and is particularly useful for non-governmental organi-

zations, associations or informal groups. With the abandonment of the principle that the confirmation of competence and broadcasting skills is the domain of formal educational institutions and professional associations, we gain the ability to certify the knowledge and skills of local (witness may e.g. Non-governmental organization, an association, a group of environmental, local government, "smart city", etc.). In addition, certification of "smaller" learning outcomes and their visualization in the form of Open Badges makes it easier to fit the profile sought employee competence to the specific requirements of a particular, often awkward work, but is available in smaller, local companies. With the development of technology and infrastructure Open Badges there is a need to provide counselling services for local and individual learning environments – career counselling environment.

**Charities**. Charities organizations, associations and foundations can use the Open Badges to measure the results of their work and to use this evidence to gain new funding or promoting their business. An additional benefit of using Open badges by such organizations is the low cost of issuing badges and very simple way of dissemination. Badges seem to be an excellent tool for preparing refugees for life in a new country. Apart from the possibilities of transferring important information during training adaptation issuing badges should motivate and encourage refugees to greater integration in the new location.

Can be particularly useful in situations when the badges confirmed by a range of achievements need not be global or national, but only local. Issuing badges by local informal groups or local government allows deep rooting in the local consciousness. It's the perfect way to integrate local environment, raising awareness allowed by local problems and ways of solving them.

**Summary.** Open Badge is a digital sign graphics, which contains a description of educational and / or professional achievements, certified by a credible organization. Holders of Open Badges have the full opportunity to publicize them on the Web, where stakeholders can get acquainted with them. From the technological side, it allows web infrastructure developed by Mozilla and shared on an open source. By means of the Open Badges we can illustrate individual stories of learning and professional achievements, creating a virtual CV available for potential employers, providers of various forms of education and other stakeholders.

After just a few years after the end of the HASTAC contess (2013), we can count far more than 14 thousand larger organizations all over the world, independently issuing the Open Badges. Among them are well-known enterprises, cultural organizations, schools, territorial units and many other types of organizations (e.g. NASA, Samsung, Microsoft Educator Network, IBM Authorized Training, YMCA of Greater New York, Michigan State University, Peer to Peer University). There are more than 20 large innovative web platforms technically supporting the publication and dissemination of Open Identifiers Competence (e.g. Youtopia, Makewaves, OpenBadgeFactory, Open Badge Academy, BadgeKit, BadgeCulture, P2PU Badges, WP Badger, and others). This way there is an opportunity to create a community and technological environment for the achievement of a new non-formal quality, open validation of educational attainment and professional.

Currently around the world there are many projects being realized with the Open Badges, Digital Badges and educational attainment microcredentials. Open Badges very dynamically develop in the United States and Australia as well as in the United Kingdom. Still, this is a new idea and needs a broad campaign of disseminating.

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## **Bibliography**

- Finkelstein J., Knight E., Manning S., *The Potential and Value of Using Digital Badges for Adult Learners*, American Institutes for Research, 1000 Thomas Jefferson St., NW. Washington, DC 20007, July 16, 2013, https://lincs.ed.gov/publications/pdf/AIR\_Digital\_Badge\_Report\_508.pdf [access: 09.05 2016].
- 2. Grant S., *What Counts as Learning: Open Digital Badges for New Opportunities*, Digital Media and Learning Research Hub. Irvine, CA. August 2014, s. 12 [access: 02.05.2016].
- Knight E., Open Badges for Lifelong Learning, The Mozilla Foundation and Peer 2 Peer University, in collaboration with The MacArthur Foundation. Working Document (White Paper). Updated: 8/27/2012. http://bit.ly/EKwhitepaper, s. 3 [access: 10.05.2016].
- 4. Open Badges. Competency Credentials for a Digital World. https://www.totaralms.com/sites /default/files/ resources/ open\_badges\_guide\_totara.pdf, 2015, [access: 15.05.2016].
- 5. Walmsley R., Development in the Prison Systems of Central and Eastern Europe, The Institute for Crime Prevention and Control affiliated with the United Nations, Helsinki 1995, HEUNI Paper No. 4.
- Woźniak I., Nowakowski M, Poświadczanie osiągnięć edukacyjnych i zawodowych za pomocą otwartych identyfikatorów kompetencji (Open Badges), Zeszyty Naukowe Wydziału Elektrotechniki i Automatyki Politechniki Gdańskiej, Nr 48/2016, s. 101–106.

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