
THE E-PORTFOLIO CITY

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Abstract: Our intention in this paper is to explain the Idea of a light-weight and easy understandable electronic learning Portfolio (ePortfolio) - Framework for the usage in an entrepreneurial environment. The main focus of the framework is to support Human Resources Management, especially HR-Recruitment, Management and Development. This framework is based on central ideas of the JISC ePortfolio Reference Model[1] and augments them to fit an enterprise HR environment. To make this Framework intuitively comprehensible, we used the analogy of a city – so we create the electronic learning portfolio city, ePortfolio-City, to represent the different parts of the framework. To show how the framework works, we will guide the reader through different scenarios in the city, represented by six days, each day representing a new scenario.

Keywords: ePortfolio, Lifelong learning, Lifewide learning, Model

Introduction

Current research on the use of electronic portfolios is characterized by a number of questions which their structure, ownership, supporting services etc. – i.e. their embedding into real life. This paper approaches these questions by means of a thought experiment. This experiment is motivated by the following considerations.

There is wide agreement that electronic portfolios have the potential to considerably affect the ways lifelong learning is planned, supported and documented. The history of education suggests that such changes are unlikely to happen overnight with a broad and radical change of educational practice. It is more likely that electronic portfolios will first enter general usage as simple replacement of paper based portfolios where they offer improved versions of already appreciated values – for example a better presentation, simplification of copying or ease of transmission. These electronic portfolios in place then may offer additional possibilities not inherent in paper based portfolios. Creative learners and teachers will take up these new possibilities where they offer short term advantages, thus slowly enriching pedagogies with new forms of learning, teaching and collaboration. In a further step the availability of large quantities of electronic portfolios will enable new qualities of service inside and outside of education.

But let's step back to present times. If our thesis is correct that electronic portfolios will be first taken up where they replace existing portfolio practice, then it is worth considering current practice and to explore, how it may be affected by electronization. So, let us take a week off, observing people in fictive "ePortfolio City". This city is not very different from existing cities; in fact the only difference is that standard paper-based communication processes are all electronic.

With this thought experiment we hope to achieve four objectives.

- Identify existing processes and needs which may benefit from the use of electronic portfolios and where, therefore, electronic portfolios are most likely to be accepted and used,
- Identify existing institutions which may play a role in the broad deployment of electronic portfolios,
- See which portfolio related services are offered by these institutions and how they may be augmented or replaced by electronic services,
- Explore, how some of the aforementioned open questions may be answered if the answer is sought as close to existing practice as possible.

We shall not complete this work in this paper. This visit in ePortfolio city is just an expedition into another world in order to observe behaviour – to collect process models if you prefer a more technical term. Analyzing these data is a further step to be gone.

A word of caution seems appropriate: We do not wish to suggest that ePortfolio systems should be built as an electronic model of a city. Deriving service oriented software architecture from a

collection of process models requires the aforementioned analysis. There is no reason to assume that the existing paper based infrastructure of a city is also optimal for supporting electronic processes of information exchange. However any software architecture may increase its chance for wide uptake if it is compatible with the existing infrastructure.

To get a grip what's going on in this paper, we'll start with a citation of Helen Barrett: "The lack of a common understanding for what a portfolio actually is makes it difficult for those who seek to research electronic portfolios or make wise decisions about their use." [2] Marilyn Heath writes, that one of the basic considerations of ePortfolio development is for what specific purpose and audience they are developed [3]. Therefore we will first make clear what our framework is meant to do and what kind of Portfolio it is meant to support.

This framework is designed to connect people in an entrepreneurial environment through electronic Portfolio technology. It is meant to identify competencies of people, to exploit their strengths, to help them discover their weaknesses and to help them improve. By using portfolio technology, it also should support lifelong and lifewide learning, to help people use all of their competences, not only those closely tied to a work environment.

For usage in this paper, we need to make a distinction: There are ePortfolio Systems, and there are ePortfolios. The systems work with ePortfolios, while the ePortfolio itself is meant to be an artefact created by the ePortfolio Systems from data to be taken from one or more repositories.

The Electronic Learning Portfolio City

On startup, our ePortfolio-City is a normal City. Some of the institutions in the city, which we shall discuss in detail below, provide services for portfolios... ePortfolio Systems could interact through a variety of services, so some service providers are selected as an example, to show how different systems could interoperate. There are many installations in a normal city which we do not need in our ePortfolio City – we shall abstract from these. Therefore, we first define of which components the ePortfolio City consists and how they work. We will also give an example to what ICT-System an installation could correspond to. These are the different "installations" in our ePortfolio-City:

The People: In our ePortfolio City, people are the ones who use services. Everything is focused on people and made for the people. They are the reason why there are installations in our City, which provide services for the ones who want to use them. People can use every service the installations in the city provide. If a service is used, as a result, a letter is sent. Letters are artefacts, which are created by the installations of the city. Of course, the letters are electronic in ePortfolio City. They are in fact ePortfolios.

The Bank: Every citizen of our City has an account in the bank and has access to the bank – but only to his own bank account. The bank in the ePortfolio City is of a special kind, as are the assets in the bank. The assets consist of letters, which can have all content a normal letter can have. In our ePortfolio City, those assets can be transferred by letter and only by letter. We describe assets as letters and not as financial assets since the owner has the legal right to copy them. The Bank also provides access to all services of the other installations in our ePortfolio City through the Personal Bank Account. The Bank account is the pendant to a personal electronic Portfolio system.

When ePortfolio City grows, several banks might enter the scene and the citizen could decide to work with one or many of them. In that extended scenario a personal electronic Portfolio system would rather resemble a home banking programme through which the citizen can inspect their assets and initiate banking transactions like the transfer of assets. For the current initial visit we assume that each institution exists only once.

The Post Office: Communication in the ePortfolio City is only done through letters, which are transmitted by a Postal Service. Every installation in the City has its own Post Box, which is attached to the Post Office and is used to send and receive letters. People in our ePortfolio City cannot be senders and receivers of Letters by themselves – only the installations can be senders or receivers of letters. But only the people are capable of initially invoking processes of communication, which result

in the interaction of installations through letters. The Post Office could be a document-management system or simply a network, to which the other installations are connected.

The Copy Centre: As every installation has its own Post Office, every installation has its own Copy Centre, too. The Copy Centre always copies letters which are sent to other installations. This contributes to the fact that technically, transferring data to a sink does not eliminate them from the source.

The Training Centre: At the training centre, everyone gets the education she wants. Regardless whether it is compulsory or higher education, and regardless of the type of competency which is taught – here, everyone can get learning courses about any topic. Provided services: Provides courses to help acquiring competencies. A training centre could be any kind of service to improve competencies.

The Archive: The Archives stores data. It stores data for a long period of time and can store different versions of data – for our ePortfolio City, it can only store letters. These letters can be sent to the archive, and it can create letters on behalf of the people. Archives could be every kind of storage system.

The Police: In a city, there are rules. The law in a city is enforced by the police. In ePortfolio-City, Police ensures that the rules are followed and that no one can do what he is not allowed to do. The Police correspond to an access control, authorisation and authentication service which is able to handle the different situations which could arise from the life in the city, which means the usage of the systems while they interoperate.

The Library: People can send letters to the library to show things, which they have stored in their bank account or in the archive. In a library, letters of people are compiled into books. People can decide what letters they want to compile, and how. These books can be seen by everyone who is allowed to do so – by the people. Everyone can search through and read every piece of information, which is available to him. Therefore, the creation of a book is the act of ePortfolio compilation for every thinkable reason. A Library is some sort of share point, on which services are offered and requested, information is exchanged and people get together. This share point can be a good extension point for external service providers, who operate outside of the scope of this framework. At this point, they could provide services, which are not accessible inside of the participating systems.

A week in the ePortfolio-City

Because daily life in a city can be very complex, we will keep track of some examples of actions which take place in our ePortfolio city, to get a feeling how everything runs. We will also explain how these examples could correspond to specific types of ePortfolios. For this purpose, we will use the ePortfolio Typology specified on the homepage of the European Institute for E-Learning – EIfE-L[4].

Day One

On the first day, someone works at a specific project and needs help. He decides to find someone to work with. Since he has a very detailed idea of what competencies he needs, he compiles a letter in which he states what he wants to do and what competencies a possible team member has to have. He triggers the Post Office Service to transfer the letter to the library, where his request is populated for everyone interested to see. This scenario corresponds to a reflective portfolio scenario, since someone reflects on his (or his organizations) set of competencies and identifies needed competencies.

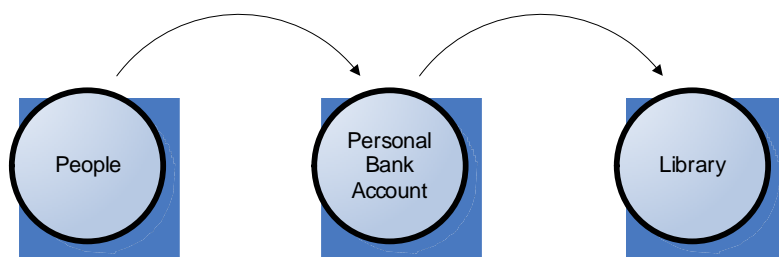


Fig. 1: The first day

Day Two

On the second day, someone is searching the library for information about interesting projects. He finds the letter which the person of the first day has placed, and is interested in the project. He then decides to write a letter in which he shows his competencies. For this purpose, he accesses his Bank Account, and compiles letters which contain evidence of his competencies. Soon he finds out that he has not all letters in his bank account – some are stored at archives. So he accesses the archives, selects the letters of which he thinks that they will show his competencies the best, and uses a library service to compile them into a book. He then transfers the book to the library. He transfers a note to the author of the offer that he wants to assist him and provides information, where to find his book of competencies in the library and authorizes him to read it. This corresponds to an assessment ePortfolio.

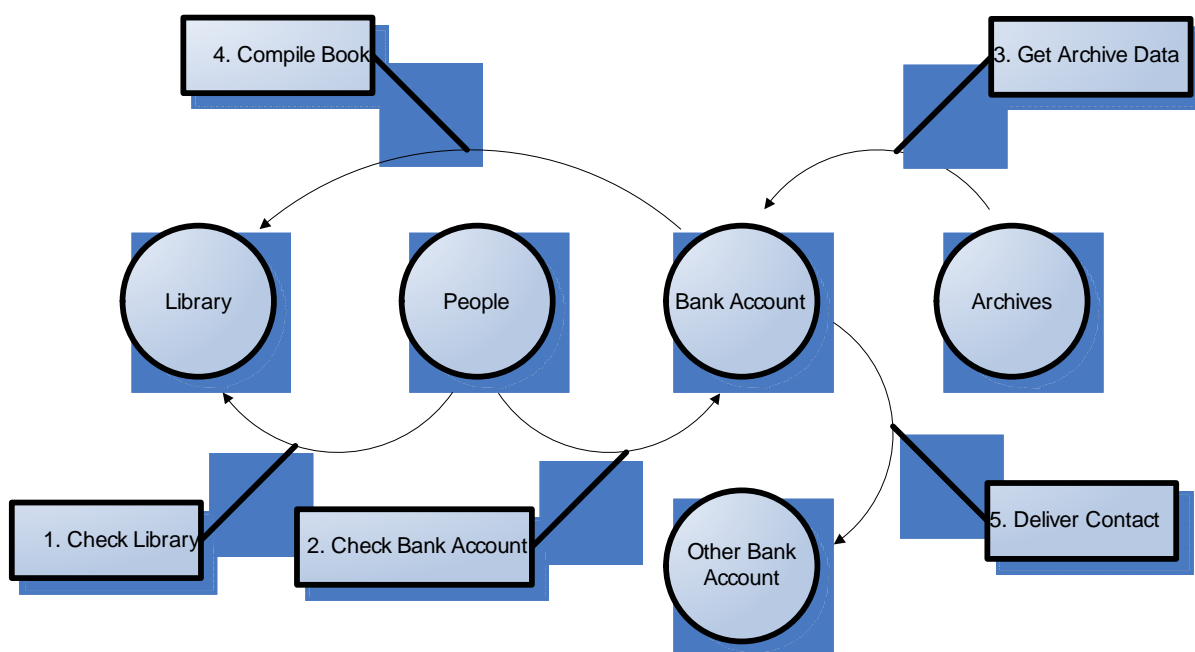


Fig. 2: The second day

Day Three

On day three, the person from day one, who sent the letter of needed qualifications to the library, sees the message in his Personal Bank Account. He accesses the library and transfers the book to his own Bank Account. He now assesses how the qualifications in the book match the qualifications he needs. After this assessment process he adds the assessment result to the book and transfers it back into the library, before transferring a note to the original author. In this example, the new member is invited into the team – and starts working on the project. This is in fact a combination of ePortfolios, in which the reflective Portfolio from Day One and the Assessment Portfolio from Day Two are put together, are reflected upon, and then put back into an archive – which could be a special library.

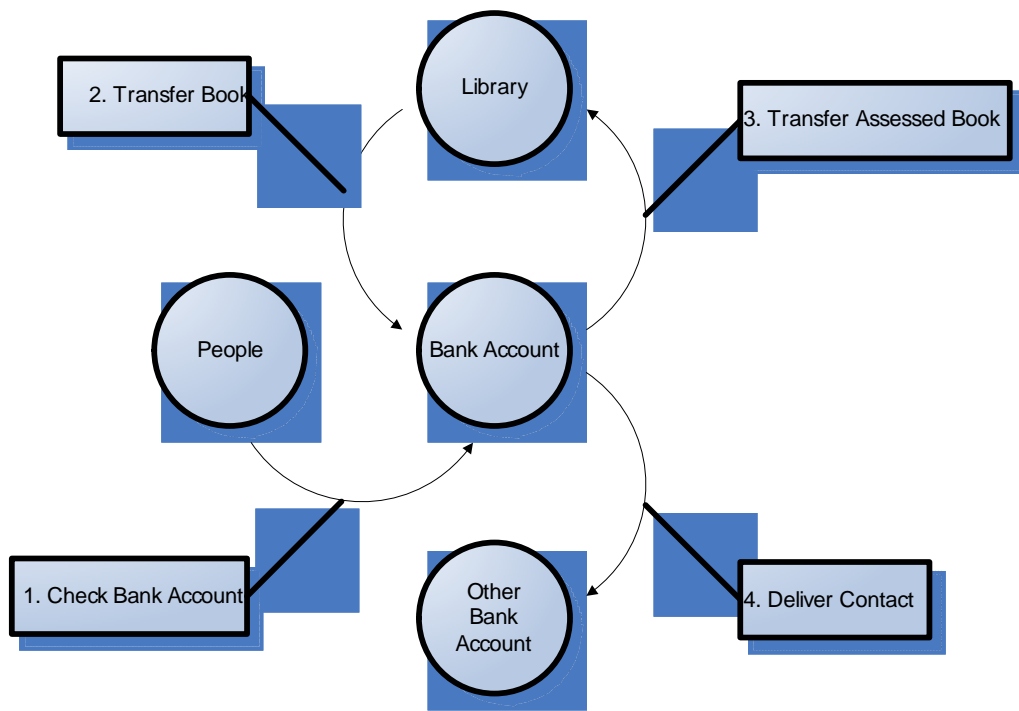


Fig. 3: The third day

Day Four

On the fourth day the new member in the team wants to improve some competencies. So he accesses his Personal Bank Account to look what competencies he has and what to improve. After that, he uses the search service of the library to find books which contain knowledge about potential courses, which can improve the competencies he needs. He finds books in the library offering courses of study, written by the training centre. He selects some courses the training centre offers. The training centre automatically creates a book with goals and envisaged learning outcomes, using the library service, and transfers the book into the Personal Bank Account of the learner. After his course of study is completed, evidence is transferred into an archive. This is an example for a reflection ePortfolio.

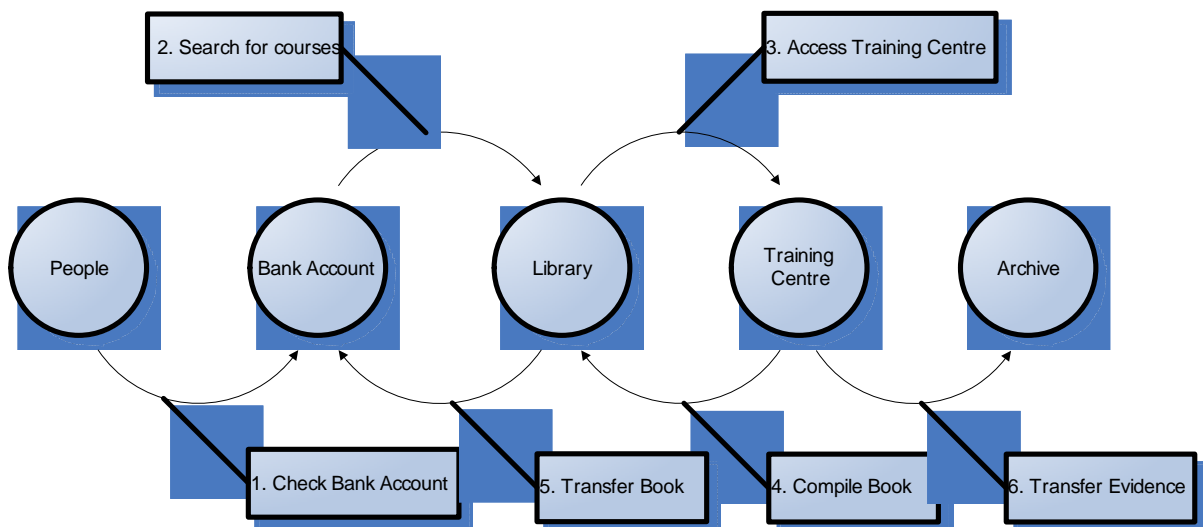


Fig. 4: The fourth day

Day Five

As the learning progresses, the learner keeps track of his progress by reflecting on the things learned. He does so by commenting on the course of study and his personal experiences. These reflections are written on letters, placed his Personal Bank Account. Optionally, the learner can transfer his

experiences to the library for others to see and to comment on it. This could be a combination between a reflection and a showcase portfolio.

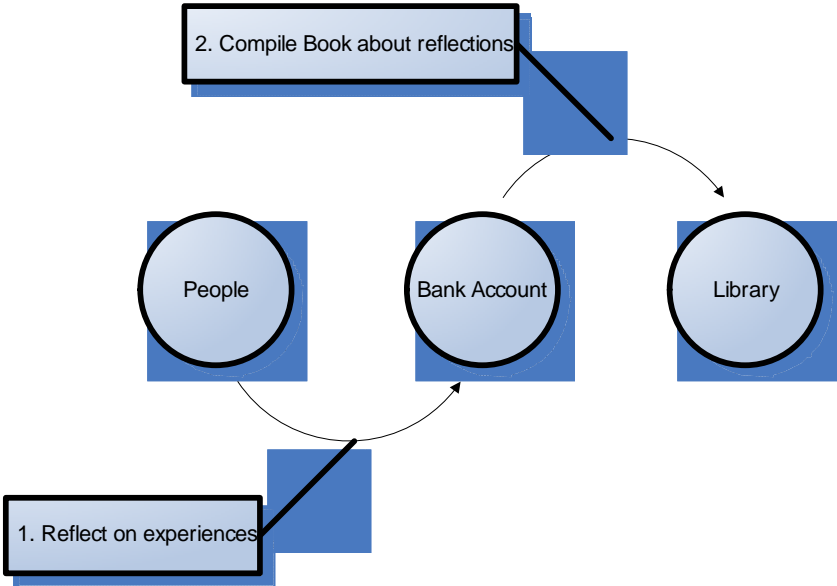


Fig. 5: The fifth day

Day Six

The new team-member has learned much and has acquired many competencies. He now wants so show how great the competencies are, by writing a book about it. He does so, by compiling information taken from many sources. He collects evidence from the Bank Account, where his own reflections are stored, collects information from the archive of the place he is working and the archive of the training centre. He then compiles the information into a book using the library services, and places the book in the library as a showcase ePortfolio for everyone to see.

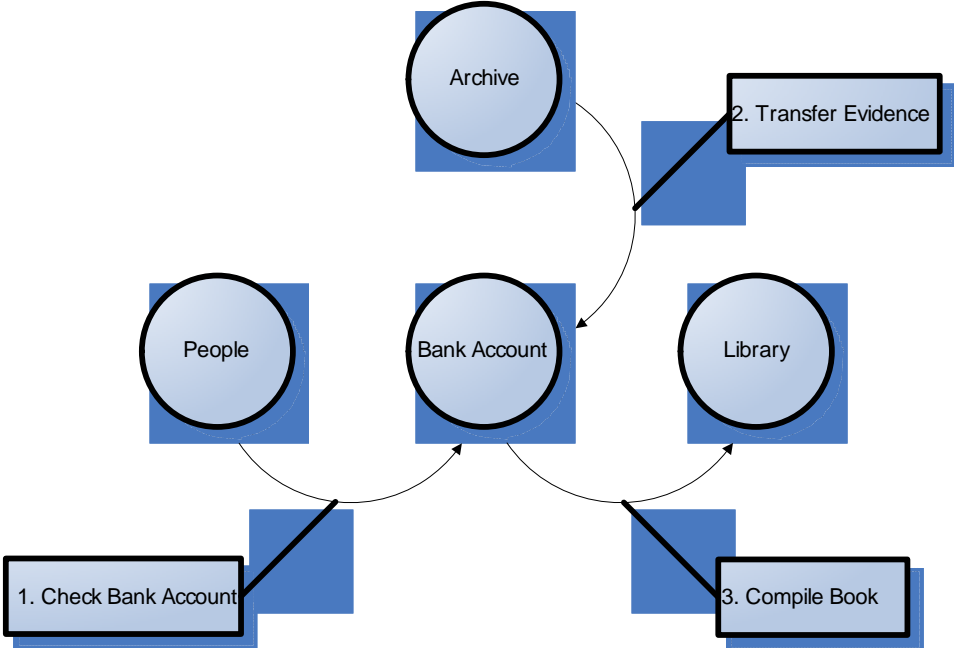


Fig. 6: The sixth day

Conclusion

This paper states a vision. Electronic Portfolios clearly have the power to significantly change how HR management, learning, development and recruiting could be handled in companies and in learning institutions. Better connecting people and tasks, this framework could make available qualified data for people to base their decisions on. It could have the power to improve the matching between people and jobs, better finding the right people for organizations and supporting both: The interest of people to find the right job for them, and the interest of organizations to find the right people for their needs. This can even lead to an environment, in which teams are dynamically created by the use of the ePortfolio information. In a learning context it can help matching the right people with the right learning opportunity, even for creating the right, personalized, learning opportunities for people.

We have seen how an ePortfolio system could be distributed to a network of already existing institutions. Bringing ePortfolio City into reality could ease the acceptance of ePortfolios in society as the central tool for documenting learning occurred and competencies achieved. It has also become apparent that this may need a gradual transformation of existing institutions or the creation of new ones with similar capabilities.

Clearly, special business processes are needed to implement such a framework, and systems should be used which are already in place, to make the best use of information which is already there. These systems have to be able to interoperate too, and there is a common consent about ePortfolio, that interoperability is one of the greatest issues. The IMS ePortfolio Interoperability specification was designed to be an approach to handle this task[5], so this could be a good base to start.

There are plenty of advantages, but also many disadvantages which we need to take into account. One of the greatest issues is the protection of data privacy, which can be quite difficult when it comes to ePortfolio usage – a strong police guided by the interests of the portfolio owner is a necessity. Easily digestible Numbers and scores for assessment may now be expressed in words and sentences, which are not that easily digestible. This means that more text does not necessarily mean more information.

Future prospects and open questions

We have discussed how systems of different types can interoperate in order to realize the benefits of electronic portfolios. Inevitably, in reality there will be a variety of such systems which act on their own and which are connected over public or private networks. Taking our metaphor further, this leads to an ePortfolio region. Often regions have their governments which set up rules for handling of assets. These rules must be reflected in the activities of ePortfolio City and it needs to be explored how these rules can support inter-regional interoperability.

Since there are already specifications like HR-XML, which are designed for many cases of HR-activities, it would be very interesting to see how the various HR-XML specifications and the IMS ePortfolio Specification could be combined.

Another open question is, how the different artefacts of competencies can be matched. Clearly, a system needs to be able to handle different taxonomies and different sets of competencies, which have to be put together.

Another open question is which processes could support such a framework and how such processes fit into an organizational environment, to actually implement such a framework in daily use. A good first step could be to look at processes which are already there, and see how electronic portfolios can support those processes. Evidently, we can support a standard recruiting process by using the IMS ePortfolio specification [6]. But it is not clear yet, how we can manage to support more complex environments like HR Development and HR Management.

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