

Atomi - Automated Student Affairs Office Service for Digital Certificates and Signatures

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1. SUMMARY

In the era of digitalization, it is necessary to take the steps towards digital document handling also in higher education. During the studies, students need to present and prove for employers and different organizations that they really are students. Students also need the certificates and study records after the studies to prove their competences and degrees.

In Finland, most of these certificates are still processed manually and certificates are given to students in a paper format including handwritten signatures and stamps. These certifications are prone to forgeries and take a lot of time to process in student administration. In order to get these certifications students usually have to go to student affairs offices in opening hours. Especially at the start of the semester queues for student affairs offices can be long and it takes effort for the students to get the needed documents. Investigation of paper certificates authenticity can also take time for those stakeholders who want to make sure that the certificates are valid. Paper certificates and the possibility to forge them without special abilities creates also challenges for credit transfers and recognition of studies.

In 2018 Oulu University of Applied Sciences together with Studyo Ltd decided to digitize not only the process but also the documents that students can order from the university. With the help of Atomi system, students can now order certificates and documents anywhere, anytime. Digitally signed documents are created and sent to the students immediately. These digital documents are difficult or impossible to modify or forge because of digital signatures.

2. ATOMI SERVICE

Atomi service is the most rapidly expanding digital signature service used in the Finnish HEI sector. With Atomi, a student can order for example certification of studies or study records.

Atomi can be integrated into the student information system (SIS) and it can retrieve data from the SIS using service interfaces. When a student has made an order in the user interface, Atomi attaches the information from a student information system to an existing document template. The document is filled with correct information from the student information system. After the creation of the document with the right information, Atomi creates a digital signature to the document. All this happens in a matter of seconds.

The student can download the document from Atomi and send it for recipients, for instance for the hiring employer. A recipient can verify that the document is genuine, and it has not been modified after the signature. This can be made with an Atomi validation service or by for instance Adobe Reader's existing functionalities.

This automation removes the need for manual processing in student affairs offices. Atomi is a great improvement for the students since they can now get the necessary documents 24/7 anywhere in the world, the only requirement being an Internet connection.

Atomi is developed in microservice architecture fashion and by using modern user interface technologies. Atomi supports also PDF/A conversion services thus being compatible with the requirements of long-term preservation of data.

3. ATOMI IN OULU UNIVERSITY OF APPLIED SCIENCES

Oulu University of Applied Sciences (OUAS) started using the Atomi service in production at the beginning of 2019. At the first phase, OUAS enabled students to take two different digitally signed self-service reports: transcript of records and study certificate. Based on the number of reports taken out of the system within the first month, it is expected that OUAS reaches the return of investment already six months after the deployment.

OUAS has calculated that previously the average time one report could be delivered to the students was approximately 5 minutes from the request. It was estimated that students need about 20 000 such reports per year that should be signed. Time to produce those reports manually required up to 100 000 minutes = 1666,7 hours = 222 days of the organization's own work per year. After the deployment of Atomi, that time can be used for other purposes since the students can take reports as a self-service - within the seconds.

OUAS will broaden the use of Atomi in becoming months by putting more self-service reports available for the students. In addition, OUAS is considering starting to use Atomi also in degree certificates signatures thus proceeding completely to electronic certificates.

4. AUTHORS' BIOGRAPHIES



Juha-Pekka Pihlajakoski works as a Head of Information Production at Oulu University of Applied Sciences (Oulu, Finland). He has a master's degree in business administration specialized in entrepreneurship (Oulu University of Applied Sciences, 2009). Pihlajakoski has worked actively among the Finnish Higher Education Institutions working groups and he has been the President of the national Synergy cooperation group. His work experience includes project management, educational information management, and production. Pihlajakoski has piloted OUAS through significant system changes including the deployment of the Peppi ecosystem in 2016 - 2017.



Jaakko Rannila works as a Senior Consultant and product owner of the Atomi Service at Studyo Ltd in Helsinki, Finland. He has a bachelor's degree in science (Industrial Engineering and Management, Helsinki Stadia polytechnic, 2006). His work experience includes several IT-projects varying from SOA projects to fully tailored software projects as well as a large national project involving Education IT-management. In addition, he has experience in developing ERP systems and search engine systems in Higher Education, renewing qualification criteria to upper secondary education in the degree programme of Information Technology in a Finnish National Board of Education project.



Lauri Stigell is the CEO of Studyo Ltd. He is a Master of Arts (General History, University of Turku, 2003). Stigell has 15 years of experience within Finnish higher education politics, EA development, and project management.