

## **Supporting Universities in the Digital Transformation in Erasmus+**

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### **Intellectual Output 4: Efficiency gains and impact analysis**

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- University of Vigo (UVIGO)
- University of Naples Federico II (UNINA)
- European University Foundation (EUF)

# Efficiency gains and impact analysis

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## Glossary and abbreviations

ECHE - Erasmus Charter for Higher Education

EWP - Erasmus Without Paper

HEI - Higher Education Institutions

IIA - Inter-Institutional Agreement

IRO - International Relationships Office

OLS - Online Linguistic Support

SMP - Student Mobility for Placement

SMS - Student Mobility for Studies

STA - Staff Mobility for Teaching Assignment

STT - Staff Mobility for Training

SUDTE - Supporting Universities in the Digital Transformation in Erasmus+

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## 1. Introduction

Each year the number of Higher Education Institutions (HEIs) that have the Erasmus Charter for Higher Education (ECHE) increases significantly. Accordingly, the number of students and staff benefiting from the Erasmus+ program is increasing day by day and it becomes difficult to coordinate mobility processes. To overcome these challenges, the European Commission attaches importance to the digitalization of Erasmus+ mobility processes. For this purpose, various digital platforms and applications have been developed to facilitate the management and multi-directional participation of mobility processes. Integration into these developed digital platforms was declared among the priority areas by the European Commission and the commission made it compulsory to complete the digitalization process for all HEIs by 2025.

This Intellectual Output (IO4) of the SUDTE project was designed to numerically reveal the benefits of the digital transformation process, by comparing traditional methods and digital tools used in the execution of Erasmus+ mobility processes between HEIs. Knowing that many processes are affected by institutional or national regulations, peculiarities and circumstances, the project's partner institutions have surveyed such details as **paper wastage**, **workload** and **time** invested in managing mobility processes in their respective contexts. Thereupon, they have conducted a statistical analysis to characterize the savings that may derive from digitization.





## 2. Methodology

The **starting point** for the analysis was the acquisition of numerical information about the aforementioned parameters during the academic years before the adoption of digital processes. Specifically, the staff of the International Relationships Offices of the four HEIs in the SUDTE consortium (SU - Selçuk University; IZTECH - Izmir Institute of Technology; UVIGO - University of Vigo; UNINA - University of Naples Federico II) were asked to provide the following data:

- The average numbers of beneficiaries of the four types of Erasmus+ mobilities: SMS (Student Mobility for Studies), SMP (Student Mobility for Placement), STA (Staff Mobility for Teaching Assignment) and STT (Staff Mobility for Training).
- The number of printed pages used for each one of the documents required by each type of mobility (see Table 1), which would rely on templates provided by the EU or models created by each HEI.
- The number of IRO staff members, their yearly hours of work per person, the percentage of that time taken by SMS/SMP/STA/STT paperwork, and the percentage taken by other paperwork (IIAs, visa letters, passport letters and internal communications).

From the initial data gathered from the IROs, we could **calculate the average times taken by each type of document** for the different types of mobility, under the assumption that, given enough experience with the management procedures, the figures to consider for paper wastage, workload and time for each type of document were roughly proportional to its number of pages.

**Table 1. Documents counted for the four types of mobilities (in black, documents used by all institutions; in red, documents used by some institutions only).**

| Mobility types | Documents   |
|----------------|---|
| <b>SMS</b>     | <ul style="list-style-type: none"> <li>• Grant agreement</li> <li>• Learning Agreement / work program</li> <li>• Outgoing application form</li> <li>• Acceptance form</li> <li>• Certificate of arrival</li> <li>• Departure certificate</li> <li>• Transcript of records</li> <li>• Bank details form</li> <li>• Social security/tax declaration</li> <li>• Letter of acceptance to entrants</li> <li>• Copy of incoming id/passport</li> <li>• Copy of incoming insurance</li> <li>• University nomination</li> </ul> |



| Mobility types     | Documents   |
|--------------------|---|
| <b>SMS</b>         | <ul style="list-style-type: none"> <li>• Incoming application form</li> <li>• Course recognition sheet</li> <li>• Document for visa</li> <li>• Course recognition confirmation</li> <li>• Transcripts</li> <li>• Student mobility survey</li> <li>• OLS results</li> <li>• Incoming Learning Agreement</li> <li>• Incoming final transcript</li> </ul>  |
| <b>SMP</b>         | <ul style="list-style-type: none"> <li>• Grant agreement</li> <li>• Work program</li> <li>• Outgoing application form</li> <li>• Acceptance form</li> <li>• Certificate of arrival</li> <li>• Departure certificate</li> <li>• Bank details form</li> <li>• Social security/tax declaration</li> <li>• Copy of incoming id/passport</li> <li>• Copy of incoming insurance</li> <li>• Incoming application form</li> <li>• Copy of outgoing id/passport</li> <li>• Grant payment to outgoing students</li> <li>• Document for visa</li> <li>• Academic recognition document</li> </ul> |
| <b>STA and STT</b> | <ul style="list-style-type: none"> <li>• Grant agreement</li> <li>• Work program</li> <li>• Application form</li> <li>• Invitation letter</li> <li>• Letter of acceptance</li> <li>• Certificate of attendance</li> <li>• Report of expenses</li> <li>• Certificate of participation</li> <li>• Assignment letter</li> <li>• Grant payment documents</li> <li>• Work program for incoming beneficiaries</li> </ul>  |

The calculated times were presented to IRO staff members for validation. Subsequently, IRO staff were asked to **estimate the time savings** - in percentage - that they would expect thanks to digitization, based on the type of information included in the different documents and on their current familiarity with the EWP tools used in their institutions. They could provide negative figures, if their expectation was that some proceedings would take longer for whichever reason.

With the time saving estimations, our statistical analysis (conducted with SPSS by UVIGO staff) served to characterize the expectations in relation to paper wastage, workload and time, which in turn yields findings about **environmental impact** and **staff productivity**.



### 3. Results

Table 2 shows the amounts of paper used by SU, IZTECH, UVIGO and UNINA, both in total and per beneficiary of each type of mobility. It is noticeable that the additional documents handled by the Turkish HEIs (presented in red in Table 1) cause a significant increase in the paper wastage per beneficiary. One cause is related to the fact that beneficiaries from Turkey require a Schengen visa to access the EU countries.

**Table 2. Total and per beneficiary amounts of paper.**

| Paper wastage                     | Number of printed pages |        |       |       |
|-----------------------------------|-------------------------|--------|-------|-------|
|                                   | SU                      | IZTECH | UVIGO | UNINA |
| Per SMS beneficiary               | 45                      | 79     | 31    | 39    |
| Per SMP beneficiary               | 31                      | 76     | 24    | 36    |
| Per STA beneficiary               | 25                      | 44     | 20    | 25    |
| Per STT beneficiary               | 24                      | 41     | 20    | 25    |
| Total (including other paperwork) | 23647                   | 5664   | 24339 | 43757 |

Table 3 shows the calculated times - in minutes - spent yearly by individual IRO staff members from SU, IZTECH, UVIGO and UNINA with the different documents required by the four types of mobilities.

**Table 3. Calculated average times spent yearly by individual IRO staff members with the different documents for the four types of mobilities. "Other documents" represent the additional documents used by some institutions only.**

| Mobility types and documents |                                   | Calculated times (minutes) |        |       |       |
|------------------------------|-----------------------------------|----------------------------|--------|-------|-------|
|                              |                                   | SU                         | IZTECH | UVIGO | UNINA |
| <b>SMS and SMP</b>           | Grant agreement                   | 15016                      | 2599   | 18367 | 23226 |
|                              | Learning agreement / Work program | 25377                      | 28214  | 18239 | 30613 |
|                              | Outgoing application form         | 31497                      | 21279  | 6284  | 3974  |
|                              | Acceptance form                   | 1797                       | 743    | 2292  | 2285  |
|                              | Certificate of arrival            | 1797                       | 743    | 3118  | 1852  |
|                              | Departure certificate             | 1797                       | 6480   | 3118  | 1369  |
|                              | Transcript of records             | 2517                       | 1772   | 3339  | 1750  |
|                              | Bank details form                 | 1502                       | 8809   | 1837  | 2183  |
|                              | Social security/tax declaration   | 2760                       | 0      | 1837  | 3974  |
|                              | Letter of acceptance to entrants  | 275                        | 101    | 1214  | 875   |
|                              | Copy of incoming ID/passport      | 295                        | 1519   | 1281  | 5352  |

| Mobility types and documents |                              | Calculated times (minutes) |        |       |       |
|------------------------------|------------------------------|----------------------------|--------|-------|-------|
|                              |                              | SU                         | IZTECH | UVIGO | UNINA |
| <b>SMS and SMP</b>           | Copy of incoming insurance   | 591                        | 1316   | 2562  | 1078  |
|                              | University nomination        | 275                        | 4928   | 1214  | 2666  |
|                              | Incoming application form    | 295                        | 1772   | 1281  | 977   |
|                              | Other documents              | 5640                       | 13753  | 0     | 0     |
| <b>STA and STT</b>           | Grant agreement              | 2428                       | 1823   | 2793  | 1709  |
|                              | Work program                 | 2890                       | 405    | 1648  | 2466  |
|                              | Application form             | 1465                       | 405    | 410   | 802   |
|                              | Invitation letter            | 425                        | 135    | 410   | 279   |
|                              | Letter of acceptance         | 470                        | 34     | 349   | 279   |
|                              | Certificate of attendance    | 470                        | 34     | 549   | 279   |
|                              | Report of expenses           | 1311                       | 270    | 1396  | 773   |
|                              | Certificate of participation | 328                        | 135    | 349   | 279   |
|                              | Other documents              | 1410                       | 1991   | 0     | 0     |

Table 4 lists the average time saving factors indicated by the consulted IRO staff for the different types of documents. A factor of 0.75 means that a proceeding that has traditionally taken 4 minutes is expected to take  $4 \times 0.75 = 3$  minutes with the digital tools. The estimations were made in a focused meeting in UVIGO, with three staff members examining the information included in each document model, averaging the individual estimations and rounding to one decimal figure. The general rationale was that, with the digital tools in place, such fields as personal data would require little or no verification after they had been introduced once, whereas the textual details included in learning agreements or work programs would still require attentive reading and supervision. The same goes for highly-sensitive data such as transcripts of records and bank details.

From these figures and the detailed calculations of the workload implied by each document type, Table 5 summarizes the overall savings foreseen for the four surveyed HEIs, in terms of (i) total working weeks saved in managing their current yearly numbers of mobilities, (ii) reduction of workload experienced by the IRO staff members, and (iii) potential increase in the number of mobilities that could be handled by the current staff under their current workload. The latter takes into consideration the increase not due to paperwork, but to the additional efforts made in the preparation and management of mobilities: advice on logistics (travel, accommodation, etc.), cultural awareness, linguistic support, monitoring of incidents and needs, etc.



**Table 4. Average time saving factors indicated by the consulted IRO staff for the different types of documents. “Other documents” represent the additional documents used by some institutions only.**

| Mobility types and documents |                                   | Average time saving factor |
|------------------------------|-----------------------------------|----------------------------|
| <b>SMS and SMP</b>           | Grant agreement                   | 0,7                        |
|                              | Learning agreement / Work program | 0,3                        |
|                              | Outgoing application form         | 0,3                        |
|                              | Acceptance form                   | 0,7                        |
|                              | Certificate of arrival            | 0,3                        |
|                              | Departure certificate             | 0,5                        |
|                              | Transcript of records             | 0,3                        |
|                              | Bank details form                 | 0,1                        |
|                              | Social security/tax declaration   | 0,2                        |
|                              | Letter of acceptance to entrants  | 0,7                        |
|                              | Copy of incoming ID/passport      | 0,2                        |
|                              | Copy of incoming insurance        | 0,2                        |
|                              | University nomination             | 0,8                        |
|                              | Incoming application form         | 0,8                        |
|                              | Other documents                   | 0,8                        |
| <b>STA and STT</b>           | Grant agreement                   | 0,7                        |
|                              | Work program                      | 0,7                        |
|                              | Application form                  | 0,6                        |
|                              | Invitation letter                 | 0,3                        |
|                              | Letter of acceptance              | 0,7                        |
|                              | Certificate of attendance         | 0,3                        |
|                              | Report of expenses                | 0,8                        |
|                              | Certificate of participation      | 0,2                        |
|                              | Other documents                   | 0,8                        |

**Table 5. Overall savings foreseen for the four surveyed HEIs as a result of digitization of mobility management.**

| <b>Productivity gains derived from time savings</b>   | <b>SU</b> | <b>IZTECH</b> | <b>UVIGO</b> | <b>UNINA</b> |
|---|-----------|---------------|--------------|--------------|
| Total working weeks saved in managing the current yearly numbers of mobilities.   | 185       | 240           | 128          | 220          |
| Reduction of workload experienced by the IRO staff members (in % of time devoted to paperwork).                         | 56,6%     | 56,9%         | 53,2%        | 54,8%        |
| Potential increase in the number of mobilities that could be handled by the current staff under their current workload. | 75,9%     | 75,7%         | 87,8%        | 82,5%        |





## 4. Conclusions

The analysis carried out in preparation of this document reveals a potential to achieve substantial gains as a result of digitizing the management of Erasmus+ mobilities. The following are some key takeaways derived from our results:

- With more than 300.000 higher education students yearly participating in Erasmus+ mobilities, saving an average of 45 printed pages in management paperwork (see Table 2) implies **a reduction of more than 13,5 million prints** every year, which entails enormous environmental impact not only in relation to paper, but also transport, packaging, ink, electricity and storage. Mobilities of teachers and administrative staff imply **an extra 3,6 million prints** saved yearly.
- In terms of staff productivity, the figures of Table 5 reveal an expectation of **average reductions above 55%** of the time spent in paperwork, which would result in a reduced workload for the IRO staff members, and contribute significantly to improving the management **diligence** from the point of view of the beneficiaries of the mobilities: fewer errors, shorter or no delays, etc. The IRO staff would be able to use the saved time to improve aspects that have traditionally stood out as weak in the satisfaction polls, such as the cultural preparations and the logistic support given to beneficiaries before their mobilities, the follow-up and support offered during the stays abroad, and the dissemination of the attained results after returning.
- From a different perspective, the time savings reveal **an opportunity to manage an average of 80% more mobilities** with the same resources and staff currently available. Effectively, this removes one bottleneck that has prevented HEIs from offering the Erasmus+ experiences to greater numbers of people, thus paving the road for more effective usage of the program's budget.