Converting Office Into E-Office: Four Case Studies

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1. EXECUTIVE SUMMARY

1.1. Motivation

Although the overall course of university agendas electronization is indisputable, the extent (and obviosity) of paperlessness is far from balanced in various areas of university life. Apparently the most progressively growing is study and learning, while areas like economics and human resources are much more conservative. Nonetheless, even in these areas the classic paperwork tends to give up and put the bits and bytes to do the work. The paper presents four case studies of converting offices into e-offices as experienced at Masaryk University in Brno.

1.2. The Four Studies

The subject of the paper is illustrated on the following cases:

1. *electronic applications for the leave of absence*
2. *electronic financial control*
3. *electronic approving of projects proposals*
4. *electronic travel warrants*

Submitting and approving *electronic applications for the terms of the leave of absence* simplifies the paper process in four aspects: way of authorization, transferring, recording into the attendance database, and consistency checking. The major advantages – apart from saving copy typing – are timeliness, prevention of time collisions, and information transparency.

Electronic financial control concerns economic documents – first of all orders and obligations. The major advantage – in addition to those already mentioned in case 1 – is the immediate availability of the accompanying documents in the electronic document store.

Electronic approving of projects proposals extends the functionality of the system for projects management, and brings another advantage over paper procedures: versioning of project proposal documentation in case of proposals re-submissions.

Electronic travel warrants represent a very complex agenda ranging from electronic submitting and approving proposals of working trips, via cost pre-calculations made by the traveller, up to final calculations after his/her return, followed by financial controls (as mentioned in case 2). In this case, the added value of the electronic process compared to the paper one includes also substantial extension of information scope.

1.3. Experience Gained

The above outlined examples of converting offices into e-offices are slowly but surely becoming part of Masaryk University everyday life. In all cases the implementation is part of the in-house developed university intranet enhanced by interfaces for exchanging data and algorithms with externally provided economic information system. The overall experience shows that: 1. electronization works, 2. it works differently from the initial expectations, 3. it works on condition that the paper way remains an alternative.

2. STUDY 1: ELECTRONIC APPLICATIONS FOR THE LEAVE OF ABSENCE

2.1. Background

Electronic applications for the terms of the leave of absence (so-caled *e-leaves*) were developed in the last year as an alternative to classical paper applications, and put into operation at the end of the year (Ocelka, 2009).

Submitting and approving e-leaves simplifies the "paper workflow" in four aspects:

1. way of authorization,
2. transferring,
3. recording into the attendance database,
4. consistency checking.

Authorization and *transferring* simply rest in pressing the "Approve" button in the respective intranet application. Pressing the button replaces both the signature on a paper application, and manual transfer of the application to the subsequent point in the approving process.

Recording of the approved e-leaves *into the attendance database* is done automatically after the last point in the approving process presses "Approve". No copy typing is done.

Consistency checking means checking the terms of the applied-for leaves with the terms of the applicant's other absences.

Thanks to the fact that the university *electronic attendance system* is in-house developed as a part of the university intranet, the implementation of e-leaves is also done in-house in the university intranet. The only necessary interface to the externally provided economic information system (EIS) is a pair of functions providing, for a particular employee, his/her department head (unique), and his/her project leaders (one or more).

2.2. Results Gained and Lessons Taken

The major advantages – apart from saving copy typing – are rather obvious: timeliness, prevention of time collisions, and information transparency and dissemination. Information dissemination concerns mainly project leaders: applications for the leave of absence are submitted to, and approved by, department heads, while project leaders of the projects the applicant works on are not actively participating in the process. In the paper case, project leaders are not officially informed about the approved applications. Contrary to this, information about any approved e-leave is automatically sent to all the respective project leaders.

What is not as obvious as the advantages is the lesson taken from this case. At first the system was put into operation at a single organizational unit of the university to unveil real or potential problems. After two months of smooth operation (by the way, the two months included Christmas time when applications for leaves are rather frequent) the system was released to the whole university, immediately invoking quite a lot of protest basically saying: *You force me to do the work of my secretary!* Fortunately, the paper system was always intended to remain the alternative to the electronic one so the protests could be smoothed rather easily.

To finish this chapter with an illustrative number: The e-leaves form 60 % of the total number of applications for the terms of the leave of absence at those organizational units who are running the system.

3. STUDY 2: ELECTRONIC FINANCIAL CONTROL

3.1. Background

Financial control concerns economic documents such as orders, obligations, claims, contracts, assets administration documents, etc. The Czech accounting law requires "three pairs of eyes" to see any individual document, and the respective hands to sign it to approve financial obligations resulting from the document.

The “paper version” of financial control started to be converted into the electronic one in 2008. It was the very first task in a complex project called *Electronic Flow of Administrative Documents* at Masaryk University and covering (beside others) all document types discussed in this paper. The first document type converted from paper financial control into the electronic one has been the orders. Currently obligations are being solved, and claims are the next to come.

Because of the fact that the data processed in financial control is completely stored in the EIS, but the applications must be part of the intranet (potentially anybody from the university may actively participate in financial control) the implementation of electronic financial control in the intranet requires rather robust interface to the EIS (Kohoutková, 2005).

3.2. Results Gained and Lessons Taken

The major advantage of financial control electronization – in addition to advantages already mentioned in study 1 – is substantial reduction of paperwork. Electronic documents are typically accompanied by various supplements – orders by offers, obligations by orders (hence offers as well) or contracts, etc. The immediate availability of these accompanying documents in the electronic document store represents an advantage that beats the paper process convincingly.

The lesson taken in this case draws from the necessary collaboration between the university intranet and the externally provided EIS. Since the development of interfaces to other systems is not the major subject of interest of the EIS provider, the initial estimations of the necessary time and money to develop the EIS interface can never be sufficiently dimensioned.

In this case the percentage of electronically performed financial control is as high as 90 % of the total.

4. STUDY 3: ELECTRONIC APPROVING OF PROJECTS PROPOSALS

4.1. Background

The *System for Projects Management* (called ISEP) contains records of all projects running at the university, as well as projects proposals (Machač, 2009). The latter allows exporting and printing accompanying documents required for internal procedures of proposals approving. The system was developed during the last year (Machač, 2009), and currently its functionality is being enhanced by electronic approving of projects proposals.

A new task, not experienced in the previous studies, is to define the approving process so generally that it allows for various levels of granularity at various organizational units of the university (tailored to the needs and routines of the respective unit). In other words: approving processes at individual units may differ in the number of the obligatory steps as well as in the positions of the approving bodies.

In this case the whole system is in-house developed as a part of the university intranet so it does not require any interface to the EIS.

4.2. Results Gained and Lessons Taken

The electronic form is, naturally, expected to considerably simplify the approving procedures. The development shows another advantage, not experienced in the previous cases, which is versioning of the documents if proposals re-submissions are done. Similarly to study 2 the result is substantial reduction of paperwork thanks to the availability of the documents in the electronic document store.

The lesson expected in this case results from the above mentioned variability of the approving process at various organizational units. In some cases the approving bodies will not be explicitly defined in the system, so the system either will not support the electronic approving process at all (giving up in favour of the paper process) or will require from the user to choose between multiple approving bodies, or will send the application to all approving bodies. Whatever the decision will be there will surely be a lot of criticism addressed to the system before it settles down.

5. STUDY 4: ELECTRONIC TRAVEL WARRANTS

5.1. Background

Electronic travel warrants represent a very complex agenda ranging from electronic submitting and approving proposals of working trips, via cost pre-calculations made by the traveller, up to final calculations after his/her return, followed by financial controls (as discussed in study 2). The system architecture, design, and key parts of implementation are subject of a diploma work that will be defended at the beginning of July.

The system is again implemented as a part of the university intranet. The major problem here is the need of exchanging both data and algorithms with the EIS, i.e. to define all the respective interfaces – from simple code lists up to rather complex data sets containing detail cost calculations.

5.2. Results Gained and Lessons Taken

In this case, the added value of the electronic process compared to the paper one includes – in addition to all previously mentioned advantages – substantial extension of information scope, mainly in cost pre-calculations (if done on paper, just total sums of expected costs and advance payments required by the traveller are stated, without references to detail records).

The lessons expected in this case will be the summary of all previously discussed: From *You force me to do the work of my secretary!* coming from the approving department heads, via the time&cost consuming interfaces to the EIS, up to the variability of the approving process at various organizational units.

6. PROSPECTS

Although the "lessons taken" from the four studies discussed in the paper may sound pessimistic the contrary is the case. The potential of university agendas electronization is extensive, and the savings of manual work indisputable. This is known in study and teaching for quite a long time, and time has come for economic and operational agendas: those discussed here are – slowly but surely – becoming part of Masaryk University everyday life.

At the very end of the paper it should be stated that: 1. electronization works, 2. it works differently from one's expectations and estimates so needs patience and endurance, 3. it works on condition that the paper way remains an alternative.

7. REFERENCES

Kohoutková, J. (2005). Managing Development of University Information Infrastructure. *Proc. of EUNIS 2005,* Manchester (UK).

Ocelka, J., Čapek, V., Kohoutková, J. (2009). The Inet Tips: E-Leaves. *MU-ICS Bulletin, volume XIX, No. 3*, pp. 8–11, from: http://www.ics.muni.cz/zpravodaj/articles/606.html. *(in Czech)*

Machač, Z., Kohoutková, J. (2009). The ISEP System One Year Later. *MU-ICS Bulletin, volume XIX, No. 4*, pp. 11–15, from: http://www.ics.muni.cz/zpravodaj/articles/613.html. *(in Czech)*