Future economists in clouds

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Abstract
The future of education and business technology is all about cloud and anywhere access. University of Economics, Prague seeks to introduce our students all the possibilities of cloud computing. We focus on the use of these technologies in business and everyday life.

Keywords
Cloud computing, Office 365 Business, University of Economics in Prague

Introduction
To be accessible anywhere and at any time and to have all documents and necessary materials within reach. This idea is not light years away; on the contrary, it becomes universally demanded standard. To show pictures from holiday to your friends while waiting at the station, to have complete documentation of your company at business meeting without taking company notebook along, to comfortably check status of your friends via social network and to organise a party, to communicate with high quality sound and image, quickly and immediately with anyone all over the world – all this is possible thanks to the cloud computing.

We are in contact with this technology on daily basis without really thinking about the principle upon which it works. If we want to read e-mails via Google or Yahoo, we use cloud. Similar situations is with phenomenon of our days – Facebook. We know username and password and we can connect anywhere via internet browser. We do not need to have any special software, only usual actualised internet browser and access to internet connection. These services are not too demanding with regard to hardware; if we follow key rules of safe internet, we can use also somebody else’s device, for example in internet café.

We must observe that the ones to use these technologies most easily and with most enthusiasm are the students. The students are able to use them further not only for private purposes, but also in future professional lives. Universities, but also secondary schools, therefore do not hesitate to introduce these technologies into education and in-house system conception. For many years University of Economics in Prague has been using Office 365 Business as a product of integrated communication. Thanks to this tools the students can test communication, calendars and storage in cloud. In doing so, they become part of the team.

This article aims to capture all possibilities the cloud computing offers in product Office 365 Business, and how it is used by University of Economics in Prague. The article concentrates mainly on work of students in cloud and possibilities which are open to those who actively use cloud services such as sharing and storing large volumes of data, active using of mailbox with possibility of classification of e-mails and searching of actual information and communication via already mentioned intranets. The intranets are designated for various groups of students and employees, depending on their membership of individual faculties or departments.

Office 365 offers various possibilities for modern students. Individual possibilities will be subject of following chapters. The first chapter deals with mail and advantages of company (school) database of contacts. Following chapter is about calendar, which is closely connected with mail for example in the shape of invitation to meeting. To attend a meeting means the necessity to have various documents and materials within easy access, which will be described in next chapter. As some of the meetings are quite time-consuming, and with regard to general economization, company communications systems as described in chapter 4 assume importance. Fifth chapter shows connection of described means and introduces further possibilities of intranets, i.e. internal (in-house) webs. Main thread of all the chapters is chance of connecting school virtual life with personal life so that it is possible to comfortably use all advantages of cloud services in one’s favourite device.
Mailbox

Basic instrument for communication is e-mail. Office 365 offers Outlook for administration of e-mails. This very popular product is used mainly in business sphere. Number of graduates appreciate the fact that they are able to safely and expertly use this mailbox from the very first day in new job. Some of the employers even set expertise of dealing with Outlook as one of the requirements in advertisements of jobs which are meant not only for the graduates.

Basic advantage of Outlook is possibility of classification of e-mails into files for easier navigation. Students usually have files based on current of successfully completed subjects, or on their specialization. Outlook enables user to create sub-files not only in delivered mail, but also in deleted mail.

If the student uses more e-mail addresses, it generally means to have to first check private e-mails on Google, then school messages in Outlook. This means having to sign in into various mailboxes. Outlook offers the option to manage all e-mails in one storage space, or to create new file for private correspondence which shall be kept for some time.

Files in delivered mail and classification of e-mails have already been mentioned. Business e-mails usually have annexes which take up a lot of storage space of mailbox. Outlook offers quite a large storage space which is usually sufficient for whole time of one´s studies without the necessity to clear the mailbox and store annexes on hard disk or external storage devices on regular basis. Great advantage of working with e-mails and their annexes lies in their easy accessibility. If we are forced to save the annex on hard disk and to delete the mail because of low mailbox capacity, we do not have the access to the document during every sign in into the mailbox. We have to keep in mind to have the document with us on flash disk or other portable storage device at all times. We cannot rely on 24-hour access on every device.

Other possibility to make control of e-mails easier is used by the students who use other common products of Microsoft company, for example if the student works on computer with operation system Windows 8 or higher and at the same time uses mobile phone with operation system Windows Phone. Therefore falls away the necessity to sign-in when checking and working with e-mails. Both of these operation systems offer administration of e-mails in application interface. The user is notified of new e-mail by sound and visual signal similar to incoming SMS. E-mails are automatically actualized, unless the user chooses different setting.

Using Office 365 in mobile phone and tablet is very comfortable and does not lack any widely used functions. It is a reasonable alternative for travels, or for all cases when we are forced to use mobile internet connection. Our students need to be in permanent contact with school even in the time of holidays so that they can quickly respond to offers of research or study stays or conferences. All these activities offered by the university raise interest, and it is necessary to react as quickly as possible. Most of these offers come via e-mail, so the students appreciate connection with their mobile phones and tablets which they carry along at all the times.

Calendar

Diaries have become usual part of students´ everyday lives. We should point out that the diaries are becoming fuller and fuller. Paper diary has several disadvantages. One of the main disadvantages, which everyone sooner or later comes across, is that such a diary does not beep to remind us that we should have been on some meeting or another. Also, in paper diary we can hardly keep materials for the meeting we are going to miss anyway.

Electronic diary offers basic events we are going to attend. For the students it means mainly to note terms of exams, and how long the exam is probably going to take. The diary will naturally remind them that they should not plan a party to celebrate successful completion of an exam before this exam is over. We can easily spot and prevent overlap of events.

As a rule it is advisable to come to the exam or any other meeting ahead of time; therefore the students can set alert one hour or one day before. For this we can use above mentioned interconnection with mobile phone which gives us audio and visual warning about upcoming event, as well as basic information about this event.
Events can be inserted manually, i.e. to directly insert one-time or repeated events, or via invitation to a meeting or via intranet. First we will shortly describe possibility to receive events from intranets. As was said before, University of Economics in Prague uses various level of intranets. All levels use events which are related to given level, for example whole school or one faculty which the student attends. On first page of the intranet there is usually a calendar with events. If the event is of some interest to the student, he or she can simply add it to his calendar with one click. This is made possible by the fact that entry into intranets and whole Office 365 Business is done by one synchronized username and password. Student is signed into intranet by his or her name, so his or her movements and activities within intranet are not anonymous.

Another option to insert event is in form of invitations to a meeting. Head of the department, or mostly his or her secretary, creates an event, let’s say “department conference”. All members of the department are invited to this event. Each of them receives an e-mail where it is said whether he or she should attend the conference or not. Attachment to this e-mail can be various materials to study, so that all of them come to the conference prepared. If the member of department accepts the meeting, it is inserted into his or her calendar with the possibility to set alert.

Documents
Documents in form of attachment to e-mail have already been mentioned, as well as sufficient capacity of mailbox. However, we can meet with a problem in shape of size of the attachment itself. Solution is offered in form of document sharing via another service of Office 365 Business, which is OneDrive. OneDrive offers large storage space, where we can store data up to the size of 1 TB, which opens wide possibilities for both school and private use for the students. Documents stored in OneDrive are again accessible at any time after sign-in from any device with installed internet browser and internet connection. After entering address https://login.microsoftonline.com/ which applies for all organizations within Office 365 Business, or http://o365.vse.cz/, which is address assigned exclusively to University of Economics in Prague, all the documents are accessible from any device.

OneDrive, however, is not designed exclusively for storing documents. Its main purpose is to share them. Sharing means that one document stored in OneDrive by a student or a teacher is made available for someone else. The author can choose whether he or she will provide the document only for reading, or whether it would be possible to made some changes to shared document as well. If the author no longer wants to share the document, he or she can terminate sharing. We should keep in mind that the other party is allowed to download a copy of the document and save it during sharing. In OneDrive interface it is also possible to create files and classify the documents. This makes work easier for teachers if they need to provide their students with documents for home preparation. In past it used to happen quite often that attachment to multiple e-mail for all students attending one seminar has been too large to send, or the students have not been able to find it later during semester before they had already deleted some weeks or months ago. Now the teacher creates one file for every subject or seminar. This file is shared with all the students because their contacts are in school mailing list, so the teacher does not even have to know e-mail addresses of the students. During course of the semester the teacher can insert new documents and actualize original documents which are accessible for students from one place.

A kind of menace to all seminar students have been team works which aim to strengthen managerial skills one hand, but on the other hand arranging meetings and disloyalty of some team members were becoming nightmare of other members. OneDrive nowadays help our students to organize team works by creating one document which is shared with others and every member is entitled to make changes. Historical versions of the document are saved as well, so there is always a possibility to return to earlier versions, should the last step fail. Regular team meetings are no longer necessary and students can invest more time into their work, because they can access the documents and work on their part any time. They can also see changes made by their fellow team members in real time and to react to them which means further time saving.

It is quite common to prepare various presentations for the lessons. We mostly use Microsoft PowerPoint to prepare these presentations. We start to create the presentation on notebook. Content and
effects are easier to insert in desktop devices. After it, we save the presentation in OneDrive. If it is a team work, student makes its own part and save it in the cloud. Than he can share this presentation with my colleagues who are notified about this document by e-mail. They can see changes that the others have made even if we are not in the same place. The important thing is internet connection, although it is possible to make changes offline and then to synchronize the document. On the way to school they can go through the presentation on mobile phone, where they can also make changes. These changes are of course immediately visible for all team members. After all, they can run the presentation on any computer directly without having to install any software or use flash disc as transportable memory disc.

Further facilitation of student’s work can be described on case of writing bachelor or diploma thesis. Usual proceeding is that students writes a chapter, prints it and hand it over to his or her supervisor. The supervisor reads the chapter and writes his or her notes or crosses some parts out. Then the student has to come again to the consultation and take revised chapter. This proceeding is repeated with every chapter, sometimes even more than once. Our student begins to work on the document saved directly in OneDrive. The document is then shared with the supervisor who can make changes in form of revisions. There is no need to seek suitable dates for consultation, not to mention that notes and changes made directly into the document are far easier to process than handwritten notes.

There is yet another big advantage of cloud computing. The document is saved in datacentre which is basically remote storage space; we can download it into our computer or another device and to make several backups. The document has up to three backups which prevents potential problems related to loss of data from hard disk which can be a true disaster in case of almost finished diploma thesis. It has already been mentioned several times that we can read and change the documents basically from anywhere. We can even create them directly in OneDrive interface, because its part are several frequently used office programmes in Web App version. We do not even have to have Word, Excel, PowerPoint or OneNote installed in the device we are currently using to open the documents, edit or create them. Web App versions are suitable mostly for editing because their functions are limited. If we work in web interface, the operations are not made as quickly as we are used to from using desktop versions.

Working with documents can be slightly complicated by the necessity to use long URL and to sign in. Our students tend to be somewhat lazy and unadaptable in this aspect. This complication can be prevented by synchronization of the device we are working on, usually a notebook we use for both school and private purposes. Through the process of synchronization we create virtual disk that contains the same files we have created in OneDrive with all the documents. The document can be opened via Windows explorer as we are used to. Changes made in the document are made also in web interface once the document is saved. By synchronization we do not create copies of OneDrive documents, only another way to access them.

Lync communication

Another part of Office 365 Business is Lync. Lync can be compared to popular communication software, Skype. Like Skype, Sync serves for calling and chat; however, it has certain specifics with regard to its main use for intercompany communication.

Lync contains directory of contacts of all students and employees of the university. Unlike with Skype, you do not have to ask to be added to contacts. Unlike with Skype, you do not have to ask to be added to contacts. The communication can start immediately. Our students can call their teacher and ask about everything that was not enough time to discuss during lessons or office hours. Teachers are prepared to communicate with students in real time via audiovisual calls or chat. Lync offers choice of various statuses – Online, Offline, Away, Not Available. Students always know whether the teacher is online. If a student sends message via chat and teacher does not respond in short time, the message is automatically sent as an e-mail into Outlook mailbox. Chat is also saved in History in Outlook.

We also use Lync in case the teacher is not able to attend the lesson, whether because of illness or business trip. He or she connects with computer in lecture hall via Lync. Teacher’s voice is transmitted via loudspeakers and image of teacher or presentation is projected on interactive board. With Lync we can share screen which is used mainly during lessons of information science. These lessons are also recorded; the recording of lesson is also available for students. This mechanism can also be used for students who do not attend the lesson but connect to the conversation. The teacher gives lecture and students can give questions via chat so as not to disturb the lesson. Despite its advantages, we have to keep in mind that Lync should not replace classic lessons. It must be treated as suitable alternative in extraordinary situations.

**Intranet**

Together with introducing and testing new options of communication with students, the university has started to work with intranets. Intranets are team webs created in Sharepoint interface. Access is possible with login and password for school systems such as mail and OneDrive. Intranets are classified into various levels. Highest level which is designated for all students and employees, is all-university intranet. Furthermore, each faculty, department and some of organisations active within the university have its own intranet. Access rights are given in accordance with membership of faculty, department or organisation.

Intranet contains actualities, events, offer of educational stays abroad as well as important information concerning study. Large part of intranet is dedicated to handbooks for writing bachelor and diploma thesis and registering for secondary specialization. Intranets are connected with OneNote and offer possibility of storing documents for students. It is possible to download documents such as front page of diploma thesis or various forms. Information is inserted by teachers, secretaries or webmaster. In the future we would like to familiarize intranets to students and to encourage the students to participate in discussions under articles in intranet. It is important for the students to become part of the team together with teachers and members of academia. Students currently mostly use Facebook which is open for entire university; also the faculties have created independent Facebook accounts. Facebook is mean of communication for students, where they help and advice one another. We would like to transfer this relation to intranets, where it would be about direct communication of student with author of the article.

**Conclusion**

University of Economics in Prague aims to prepare its students and future graduates for work in their dream jobs as well as possible. Our students are forced to familiarize themselves with means of communications which are common in all major companies where most of our students try to get into. We think it extremely important to prepare our students for job interviews and future work for both small and big companies of any kind of specialization. Our students are during their studies offered quality mailbox, large storage space and current information on intranets. Despite all advantages of these products we often have to deal with ignorance of students. This situation forces us to use various marketing tools which is part of university education and our task as well. We do not hesitate to promote these innovative systems by all available means.

We believe that our students will foster knowledge of cloud services and that this knowledge will become great help at both professional and private lives. Cloud services are in present very used mechanism and we can reasonably expect that Cloud computing is medium of the future.

**References**