Introduction

Recent documents by the European Commission taking stock of the Lisbon and related strategies for the reform and re-alignment of education in Europe, point to the “imperative of attractiveness”, i.e. the competitive advantage for a university to be attractive for learners and staff (or prospective staff)\(^1\).

With regard to the key role of digital technologies and media at universities in the maturing information society of the 21\(^{st}\) century, one of the main assets in a “strategy of attractiveness” is the quality and accessibility of e-services. For example, this is underlined by the lively discussion concerning integral study or campus portals in recent years\(^2\).

This paper describes a case study that has a European scope: The system of “seamless” e-service support at the University of Duisburg-Essen, provided by the Centre of Information and Media Services (CIM), partly in close cooperation with the University Library (UB). Starting from the vision of “One Face to the Customer” and a consistent customer-oriented approach and mode of operation, a supply chain has been developed and realized, including joint access-points, a technical support infrastructure, and in-house consulting and training services. The primary customer-related asset of this support system is the so-called “e-Point”, a front office helpdesk, which provides customers access to first-level support. The e-Point is run jointly by CIM and UB and is located in the highly frequented lobby of the library. In addition, a hotline linked to a professional call manager system handles support requests by phone. Second and third level support is delivered by CIM, UB, and other internal or external specialists for call-related technologies, applications, or scenarios. The E-Competence Agency provides customers with consulting and coaching services. These special services are also delivered with the intention to promote the e-services of CIM and UB. Furthermore, CIM runs its own service centres for procurement, hardware repair and maintenance, installation of staff desktop and notebook systems, and lending of notebooks and multimedia equipment.


This seamless system of support is paying good dividends in terms of customer awareness and satisfaction as shown by positive feedback and the growing number of lecturers and students using the central digital services of the university.

**E-Point**

The Centre of Information and Media Services (CIM) and the University Library (UB) provide a joint advisory centre, called “e-Point”, which is situated in highly frequented areas of the library at both campuses of the university (see Figure 1) in order to keep the ways as short as possible. At the e-Point, students and staff member receive qualified information on all questions related to information, communication, and media support. Since it concerns the delivery of first level support, e-Point staff has a broad basic knowledge; special problems are passed to specialists on the 2nd and 3rd level of support. Consultation and support are delivered for the following services:

- University-wide identification for using the central servers
- Password change or reset
- Selection and configuration of E-mail clients
- Support related to the using the Webmail interface
- E-mail addresses
- W-LAN support (for campus-wide wireless net)
- VPN client installation and configuration for secured external access to university services
- Usage of storage and computer resources provided by CIM
- Booking of IT training and courses
- Sale or hand-out of IT-related information material (e.g.: brochures, handbooks)

On weekdays from 10-12 o’clock, user administrators are present at the e-Point, helping students and employees with all problems related to the university identification, which is required for most of the primary IT systems and services. During this time, technical and administrative issues with the magnetic cards that are required for access to the CIM PC pools at the Essen Campus are also supported.

![Figure 1: e-Point](image)
The number of inquiries made at the e-Point is usually higher during term and lower during lecture-free periods. Furthermore, we can identify a general tendency that inquiries are continuously increasing (see Figure 2).

Figure 2: Statistics showing number of personal visits at the e-point at Duisburg and Essen

The last customer inquiry showed several interesting facts. With regard to the public awareness of the CIM services, it is remarkable that still some of the key services offered are not known to all potential customers. But the e-Point which has been on offer for more than 2 years and has been promoted heavily by CIM, is already known to more than half of the sample in the enquiry (52.1%). Another 27.8% of persons stated to know the offer, but had never used it. It is particularly remarkable that the group „other users“ of the CIM use the e-Point; 21.4% of persons in this group stated to have used it already once, a further 7.1% of this group use it regularly.
The relatively large number of 40.0% of administrative staff who know the e-Point but do not use it, is related to the fact that this group is more likely to use the hotline for IT-related issues than the e-Point. With an awareness rate of 49.8% and a contact rate of 23.9% among students, the e-Point service is relatively well-known in this customer group.

UB-Information

Next to the e-Point students and staff members find the Library information point with all needed information about books, magazines, and electronic databases.
- Catalogue and user account; searching the catalogue, your personal user account, renewals, and reservations
- Elaboration of the library's stocks, the shelf marks as well as the terms of lending and registration
- Guided tour around the branch libraries

Hotline and the call manager system

The hotline provides fast and straight-forward help to customers with issues related to a technical malfunction or if someone has problems with his/her computer. Hotline staff qualifies problems and gather related information and log information in a call manager system, which distributes the messages immediately to the responsible co-workers. During the entire working day a personal partner can be reached, which it ensures that user problems can be repaired and solved as fast as possible. In addition, users can enter failure reports directly into a Web form (see Figure 4). This mechanism allows the automated call creation or, if a call is already opened, allows the addition of information. Hotline staff enters all required customer data into the ConSol web interface (Figure 5), which ensures that a customer can be contacted at various, especially incident-related, locations. Figure 6 describes a typical call.
about a problem with the Anti-Virus-Software Sophos. The creation time of a call is stored and allows the triggering of time-related events.

Figure 4: The call manager web interface

Figure 5: The call manager system has access to the data of all user accounts.
Figure 6: Typical call about a problem with the Anti-Virus-Software Sophos.

The CIM support system is represented by the following call manager queues:

- Account administration
- Consult
- Services
- E-Competence
- E-Mail
- Enterprise Resource Planning
- General
- Groupware
- Network
- PC Localsupport
- Servicecentres for media support
- Storage
- Unix Operating System
- Webservice
- Windows Operating System relating problems

Calls can be accepted by support staff and reassigned to other queues if required, e.g.: for assignments to the 2nd or 3rd level support. By default, calls are put in the General queue and are unassigned. A dispatcher analyses incoming calls and assigns them to a queue. From there they are accepted by a person. Both the call creation and call acceptance times are stored in a database and are evaluated in the reporting process. Reporting is generated in real-time over a web-based interface, displaying the mentioned queues and standard time intervals (Figure 7).
Specialists in the second and third support level

When both Hotline and e-Point cannot solve the problem, the call manager system brings the data to queues of the second and third level support and informs the suitable co-worker in the CIM. In call history/protocol view the contact, work time and call history with logged events are shown (Figure 8).

After three days the status of a new and unassigned call is automatically changed and visualized by a special icon. In addition, the queue manager is informed.
Service centre for procurement and repairs of hardware

The Service centre for procurement and repairs of hardware offers the following services to the students of the university:

- Installation of Microsoft Windows operating systems. The installation service includes a complete installation of the Microsoft Windows operating system including all device driver, updates and the Sophos Antivirus software. Usually this installation service is made within a day.
- Image update for damaged Microsoft Windows operating systems. For student notebooks that are sold by the university, CIM provides the original image versions on dedicated image servers. In case of a system crash the Service centre is able to repair the original delivery status within a few minutes.
- Installation service for campus-wide WLAN access. This service includes the installation of a standardised Wireless network interface card on all notebooks with the appropriate software and configuration for campus-wide WLAN access. This service is usually delivered within a few minutes.
- Repair service. The repair service covers the notebooks sold by the Service centre. Many repairs can be done professionally and in a short amount of time regardless of any manufacturer’s warranty. This results in short and acceptable downtimes for our students’ primary e-learning hardware: their notebook.
- Consultation For all questions regarding computers the entire team of the centre is available.

E-Competence Agency

E-Competence at the University of Duisburg-Essen started in the summer of 2002 as a project supported by the Ministry of Research and Science of the Land Northrhine-Westfalia (NRW). Its main purpose was to put into practice a new approach towards winning new layers of university lecturers to eLearning. This new approach was (and is) based on direct face-to-face consulting/coaching on demand by the lecturer. In the time-frame of the project (summer 2002-05), the five members of the E-Competence Team supported overall 900 lecturers. Thus this approach proved to be much more successful than traditional courses.

Because of the grand success of the E-Competence project, the members of the IKM (Information, Communication, Media)-Sector at the University of Duisburg-Essen (Library and Centre of Information and Media Technologies - CIM) decided to make E-Competence sustainable by allotting two permanent staff positions. Consequently, in the beginning of 2006, the E-Competence Agency was launched jointly by the CIM and the University Library.

The relaunch involved also reconsideration and some changes in the original concept. The purpose of the E-Competence Agency was then defined as raising awareness of the potential of innovative digital media and technologies for teaching, research and management throughout the university by information, consulting and coaching.
The E-Competence Agency works on the basis of a broad portfolio of services and applications. It is pursuing a continuous proactive communication and marketing strategy to reach out to the academic and other departments/units of the university to broaden the use of e-learning and the e-services.

Our Consulting and Coaching Services

Consulting and coaching services for members of staff and advanced students cover the complete range of offerings of the Centre of Information and Media Services and the digital services of the University Library. These include:

- Digitisation of learning/teaching material
- Visualisation and presentation: using PowerPoint slides and movies and Mindmaps for teaching, presentation or project management; combining notebook and beamer, worktree and Tableau
- Communication and collaboration with videoconferencing (desktop and studio) on BSCW (Basic Support for Cooperative Work)
- E-learning in "Moodle" courses rooms
- E-publishing of dissertations and other academic papers on the multi-media server "PubEdit"
- Development of multimedia contents, components and applications
- Distance-delivery of teaching and recordings of lectures or academic events by streaming media
- Media-enabled lecture halls and seminar rooms
- Interactive multimedia teaching with the Tablet PC
- Mobile Scenarios
- Facilitation of Management and Organisation by digital technologies and media

To external partners the Agency offers expertise for cooperation projects in the following areas:

- consulting on developing support structures for e-learning and e-competence in educational institutions and enterprises
- project management, especially in international projects
- e-learning and teaching, especially centred on the course management system Moodle (i.e. hosting, course development, training and consulting)

The portfolio is open to modifications whenever the need arises, thus podcasting was recently added to the services on offer. In the near future, the launch of the university-wide study portal as well as a the key role of the general administration tool LSF (Lehre-Studium-Forschung, engl.: Teaching, Study, Research) will lead to further additions and adaptations in the portfolio.
• lectures and presentations to promote the portfolio or specific applications and scenarios
• information sessions for student beginners
• workshops for a specific department or for a graduate school on a specific application/scenario or a selected “bundle” from the portfolio (e.g. presentation with various tools as one of the key qualifications of BA students; e-publishing and digital information resources/their retrieval for graduate schools; multimedia enrichment of Moodle-scenarios for lecturers).

If initial consulting results in a complex project or one with very specialist demands, experts from the CIM or the University Library are asked by the E-Competence Agency to get involved or to take over.

![Figure 12: An E-Competence presentation](image)

The Agency works on demand, but it is also addressing its customers pro-actively using various channels of information and communication (website with newsfeed, regular info-mails, articles in the university Campus Report, info flyers).

An important aspect combining PR work and consulting is the popularisation of “Best Practice” examples, such as the use of Videoconferencing to realise lectures in the two-campus university, intelligent and interesting Moodle or BSCW scenarios etc.

Since its relaunch, the Agency has recorded almost 700 consulting/coaching sessions, about a quarter of which involved also the CIM or the Library. Most in demand is support for the Moodle learning platform. Other subjects include the digital library (e-publishing, academic databases and digital information competence), multimedia components, applications, rooms and equipment, eLearning scenarios, the work with groupware (BSCW) and presentation (Powerpoint, Mindmanager, Podcasting). About 25% of the clients are professors, more than 50% other academic staff, 15% students and graduates.
In addition to its “day-to-day” work, the E-Competence Agency is involved in some of the high profile activities of the IKM-sector. For example, this year’s conference of the German Moodle community was to a large extent organised by the Agency.

Summary and Conclusions

The seamless system of support described in this paper has been developed at the University of Duisburg-Essen over a number of years and, particularly after the foundation of the new university in 2003 (out of the formerly separate universities of Duisburg and Essen). Factors working in favour of this development are:

• the cooperation within the IKM sector resulting in joint projects by CIM and Library
• anchoring the IKM sector at the top management of the university (prorectorate and joint IKM board)
• consistent orientation towards the customers

The achievements so far are for us an obligation to continue to optimise and extend our services and our support offerings to contribute to the attractiveness of the university for staff and students.

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3 www.moodle07.de