Application of Sinapse Print Simulators at the Stuttgart Media University

Entering the World of Media in Stuttgart...

Impressions of our University:

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HdM at a Glance:

- Stuttgart Media University trains media specialists.

- On September 1, 2001, the know-how of the former Hochschule fuer Druck und Medien (HDM) - a traditional education center for print and media technology with more than hundred years of experience was combined with the Hochschule fuer Bibliotheks- und Informations-wesen (HBI) a college for library and information sciences to form the HdM.

HdM at a Glance:

- Approximately 3.200 students
- 21 accredited study courses, divided into 14 bachelor and 7 master programs
- 110 professors, 125 employees, and numerous associate lecturers
- More than 6.000 applicants per year for 800 available spots

HdM at a Glance:

- Partnerships with over 40 universities in Europe, America, and Asia
- State of the art equipment in labs and technical departments
- Two libraries with over 120.000 media items
- A budget of approx. 14 million Euros per year

HdM at a Glance:

- The merging of HDM and HBI into Stuttgart Media University has created one of the most attractive training locations for those in media professions: HdM is the only university in Europe that comprises every media field.

- The wide educational spectrum allows HdM to illustrate and further develop complete media convergence processes for the students in-house.

- HdM ensures its applied teaching and research methods through intensive partnership and exchange with the business and industrial worlds.

Main Campus in Stuttgart-Vaihingen

Nobelstrasse 10
70569 Stuttgart

Faculty Print and Media
Faculty Electronic Media

Campus in the City of Stuttgart

Wolframstrasse 32
70191 Stuttgart

Faculty Information and Communication

Courses of Study Offered in our three Faculties

Print & Media Faculty

Bachelor:

- Print Media Management
- Printing & Media Technology
- Media Publishing
- Computer Science & Media
- Packaging Technology

German / Chinese Program:

- Printing & Media Technology
- Packaging Technology

Master:

- Computer Science & Media
- Packaging, Design & Marketing
- Print & Publishing

German / Chinese Program:

- Printing Technology & Management

Electronic Media Faculty

Bachelor:

- Audiovisual Media
- Media Management
- Advertising & Marketing Communication

Master:

- Electronic Media

Information & Communication Faculty

Bachelor:

- Library & Information Management
- E-Services
- Information Design
- Information Systems

Master:

- Library & Information Management
- Information Systems and Services

International Activities

- A large number of international internships and partnerships
- About 1/3 of HdM students spend a part of their studies abroad
- HdM welcomes about 300 foreign students each year

German / Chinese Program

- **Double degree study courses with Xi'an Technical University:**
  - Printing Technology, Bachelor
  - Packaging Technology, Bachelor
  - Printing Technology & Management, Master

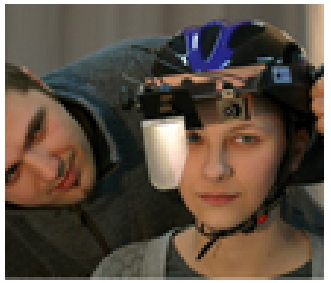
Equipment

Print, Publishing & Packaging

- PrePress: digital photography, DTP, color management, proofs, CTP/laser imaging, database publishing, gravure engraving
- Press: machines for all printing technologies including gravure, offset, flexography, pad transfer, digital, screen & last but certainly not least simulation software ☺
- PostPress: various machines for cutting, folding, gluing/stitching
- Packaging: measuring techniques, materials testing and packaging machines

Information Design & Systems

- Corporate Communication Lab
- Usability Lab
- Competence Center E-Learning



Audiovisual Media & Multimedia

- Various editing rooms and studios for film, television, sound, computer animation, visual effects, interactive media with state of the art equipment
- Motion control lab, robotic system for motion control
- Internet security lab
- Studios and equipment for event media productions
- Cross Media Lab: “Convergent Media Center”

Simulation Lab at the Stuttgart Media University

In the year 2000,
Prof. Bernd Juergen Matt,
a member of our
University Council Board,
had the idea to launch
a Simulation Lab
for Printing Processes
at the HdM

2001 the Simulation Lab was Launched!

- Started with three Sinapse SHOTS stations for sheetfed offset printing
- One elective course was offered
- Main premise for the lab: “Optimization of Processes in the Printing Industry”.
- The lab was primarily financed by the Friends and Support Association of the HdM e.V.

2002 the Simulation Lab was Expanded

- One station for the Sinapse SIR software was implemented
- A Manroland press console was purchased
- An additional elective course for the simulation of web offset printing functions was introduced

Simulation Lab 2008

- Four SHOTS stations
- Two SIR stations (the second one was purchased last month from Sinapse)
- An additional press console from Manroland has been ordered and will be installed shortly
- An excellent working relationship with Sinapse exists for many years ☺

Sinapse Print Simulators

manroland

Simulation Lab 2008

Simulation Lab 2008

Simulation Lab 2008

Simulation Lab 2008

Simulation Lab 2008

Simulation Lab 2008

Simulation Lab 2008

- Print Simulation I (Sheetfed Offset)
  - *Mandatory course for all Print Media Management majors in their second semester*
  - *Also offered as an elective course for other majors*
- Print Simulation II (Web Heatset Offset)
  - *Elective course available to all students*
- Waiting lists exist for Print Simulation II
  - *Purchase of a second SIR station*

Print Simulation I

- Development of a successive set of “build-up” folders
- Course held weekly during the semester for 1.5 hours
- A total of 35 to 50 students attend this class each semester
- Course is held completely in English
- The primary objective is to increase technical under-standing of the sheetfed offset printing process and to learn how productivity can be increased by optimising processes and thereby reducing costs!

Print Simulation I

- We begin with an introduction folder which includes 25 easy exercises and obvious hints, to learn the different tools and functions available. Subsequently, folders for different press components are completely worked through. No hints are stated within the exercises for the latter half of the semester.

- Use of checklists with respect to potential causes is reinforced.

- In the beginning guesswork is accepted, after that a logical thinking process must be explained.

Print Simulation I

- A total of 95 exercises must be completed during the semester
- Students also write a short report (max. 800 words) in English based on a technical subject assigned to them
- Students must complete a “mini” exam on the simulator
- Their grade is based on these three components
- Maximum of three students per station

Print Simulation I

- A qualified trainer needs to be on-hand to observe progress and prevent students from simply “clicking through” potential causes. Many elements require discussion to ensure complete understanding.

- Questions (food for thought) and explanations precede each exercise to ensure the students know what the goal of the exercise is.

- When possible, students are placed in teams combining technically experienced students with students who haven’t been exposed to printing presses.

Print Simulation II

- Development of a successive set of “build-up” folders
- Course held weekly during the semester for 1.5 hours; all in English
- Class is limited to 20 students per semester as we only had one station up to now
- Over-proportional percentage of women students
- The primary objective is to increase technical under-standing of the web heatset offset printing process and to build upon what was learned in Print Simulation I

Print Simulation II

- Focus on web and folding related problems, rather than print related
- Here as well, a qualified trainer needs to be on-hand to observe progress and prevent students from simply “clicking through” potential causes. Many elements require discussion to ensure complete understanding.
- Students love this course as it’s held in a small group (maximum of four students) and they are able to ask many questions and thoroughly discuss various aspects of web printing.

Print Simulation II

- We start with the reelstand and work our way through the press up to the folding unit, continually adding print faults already covered as we progress.
- Use of checklists with respect to potential causes is reinforced.
- In the beginning guesswork is accepted, after that a logical thinking process must be explained.
- There is only one oral exam (about 20 to 30 minutes) on the simulator which then determines the student's grade.

Print Simulation II

- As training on a web offset machine is not possible at the Stuttgart Media University and in the industry nearly unthinkable, this course is quite coveted.

- Students really enjoy working on a real press console
  - *There are only two locations in Europe that offer this solution and we're one of them!*

Why use Simulation Training at a University?

Why Simulation Training?

- The number of students with any type of technical training has been decreasing the last few years.
  - *Germany has an excellent apprenticeship program*

- The time and costs associated with hands-on training on printing machines has increased and/or because of tight budgets or insufficient access time cannot be fully realised.

- Some of the existing machines at our university are often old or do not reflect state of the art technologies.

Why Simulation Training?

- There are often great disparities between existing technical knowledge amongst students. Simulation software offers students who may have a certain “fear” to work on a printing machine, the opportunity to explore all kinds of functions and build-up confidence.

- Golden rule in the simulation lab: “There is no stupid question; ask now rather than later when working in the industry”. Hands-on training with fun exercises encourages students to ask questions and try different things, rather than just listen to a lecture.

- Simulation training offers students the possibility to learn how processes can be optimised and the impact on costs.

Why Simulation Training?

- Institutional theory combined with practical working experience has always been a traditional objective of the Stuttgart Media University

- E-learning is becoming increasingly important and the simulation lab is part of this effort

- Since the courses are held in English, students have one of the only opportunities at our university to learn technical printing terms in English

Positive and Negative Reactions to Simulation Training

Reactions to Simulation Training

- Students react positively to hands-on training; only exceptions are those not interested in specific offset technologies. Surprisingly it's often these students who then get a taste of "virtual printing" and attend the second elective course.

- Students who have worked on a printing machine tend to test the system to the extreme! Some of them remark that there are certain factors which cannot be simulated, but they normally don't have a solution either. We always state that simulation is an excellent training tool, but not a complete replacement for a real printing press!

Reactions to Simulation Training

- A positive aspect is the combination of fun and e-learning which appears to be particularly attractive to students.
- Some students have had their employers or parents visit the lab (talk about motivation!) and at alumni meetings a large number of visitors want to “play” with the simulation software.
- There are some errors in the software which we work around, but they are few and as I always say to the students: “There is no perfect software; even Bill Gates with all of his resources, can’t develop a faultless software”.

Reactions to Simulation Training

- System stability has improved the last few years, but there are inexplicable errors that remain. In collaboration with Sinapse and other users we hope to solve these problems.

- The screen (monitor) resolution is very low (600 x 800) which leads to problems when using other software on the same PC.

- The confidence gained in discussing technical printing issues amongst inexperienced students can be observed each semester.
  - *Nice gratification for those in low paid “educational” jobs ;)*

Personal Observations

- The excitement students have shown the last seven years is inspiring.
- The students work well in teams and the fun factor appears to be a strong motivational factor to learn more.
- The students actively exchange ideas and also monitor each others progress.
- I’ve often heard from former students that they are very thankful for the “practical” training they received in the simulation courses and have had to apply the knowledge gained on the simulator when working in the industry.

Goals,
Goals,
Goals...

What does the future hold in store for us?

Goals / Ideas

- We have many ideas for further development and improvement of the software; the HdM is pleased to be able to work closely with Sinapse.

- Through this User Meeting we hope that communications between users and with Sinapse will be strengthened, which would be beneficial to all.

- Perhaps multi-media files and pictures could be kept on a central database to be downloaded via the Sinapse website. Any users who are willing to share their pictures, videos, etc. could send these to Sinapse.

Goals / Ideas

- The number of multi-media files should be increased as many students cannot visualize what processes are taking place and where.
- More information for the different press components should be available (i.e. what is meant by the different rollers, what are the different blowers on the feeder, etc.)
- More choices of print copies (in SIR as well) should be available.
- Be able to use “live” JDF files for simulated printing

Goals / Ideas

- Improve some of the cost analysis functions
- Allow for the different print fault definitions and causes (the “Doc” in SHOTS for example) to be printed out, so that students have this as a reference.
- Clear some of the more “obvious” bugs, such as that the plate in the SIR software somehow rarely gets dirty ;)
  - *Bet a lot of “real” printers would love that!*
- Increase the resolution to a minimum of 1024 x 768.

Questions?

- Please don‘t hesitate to contact me should you wish further information:

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Stuttgart Media University


Thank You for Your Attention ☺