

Challenges of using commercial tools in developing open flexible learning environments for digital forensic courses

Sharing experience and good practices

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Outline

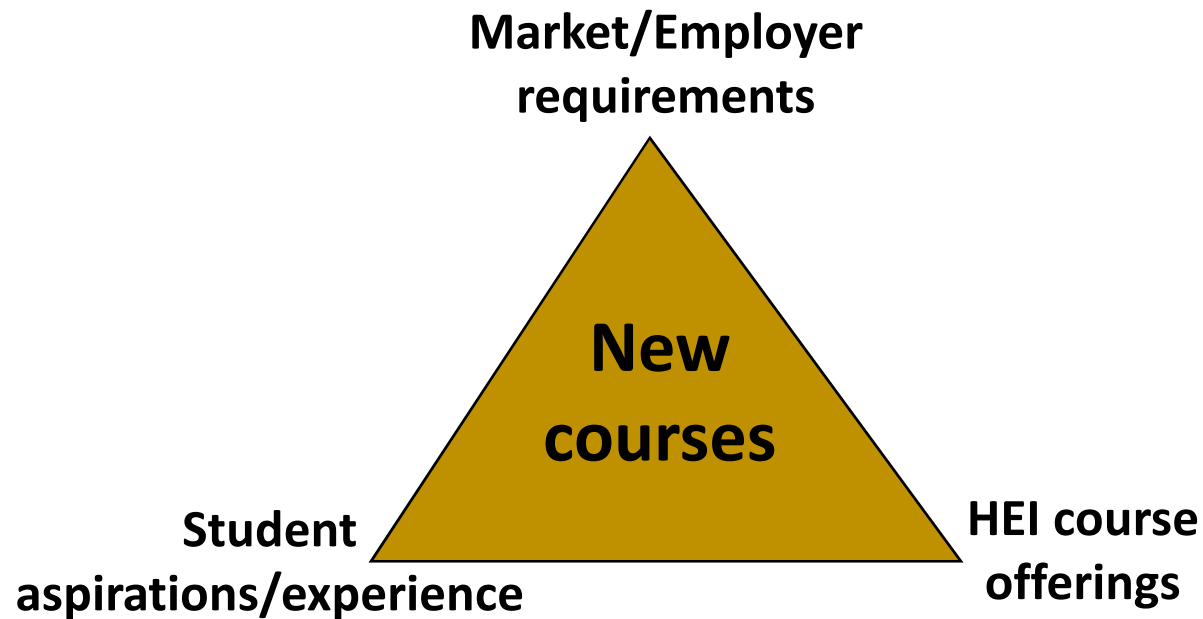
- Introduction
- New trends in HE
 - Use of commercial tools in teaching
 - Open and flexible learning environments
- Case studies
 - Digital Forensics
 - Business Information Technology
- Interactive discussions with the audience
- Summary and perspectives

Introduction

Market competition is driving new business models that are bringing new challenges in the field of HE

1. HEIs need to offer industry-standard curriculum
 - That can produce highly employable graduates
2. Employers are keen to find skilled manpower
 - Lower training costs and higher operational readiness
3. Students need to have more than just a degree
 - They need demonstrable skills to stand out from other candidates

Introduction



We need to address the challenges of this new generation of HE courses to meet the expectations of its different stakeholders – **Case studies: Digital Forensics and BIT**

The presenters

Dr Syed Naqvi

- Senior Lecturer in Digital Forensics at Birmingham City University
- Vice-President/Board Member of ISSA (Information Systems Security Association) Brussels European Chapter
- Past activities
 - Senior Consultant at “Forensic Technology Solutions” of PricewaterhouseCoopers Enterprise Advisory
 - Co-chair of NESSI-TSD (Networked European Software and Services Initiative – Trust, Security & Dependability Working Group)



Chris Maguire

- Programme Leader for BSc Business Information Technology at Birmingham City University
- Research interests: integration of learning technologies and embedding of vendor certifications within HE courses
- Past activities
 - Trainer in Microsoft Technologies at the Technology Innovation Centre
 - Web development and consultancy



HEA/BIS Support



Project ConSoLiDatE

- Multi-disciplinary Cooperation for Cyber Security, Legal and Digital Forensics Education
- Objectives:
 - Development of educational resources conveying:
 - essential cyber security knowledge
 - essential digital forensic investigations
 - essential legal principles
 - Provision of educational audio-visual resources that facilitate active student learning, debate, critical thinking and classroom engagement.
 - Development of strong links between theory and practice through consolidation of student's understanding of principles by examining applicability to carefully constructed practical scenarios.



Project ConSoLiDatE



New trends in HE

Use of Commercial Tools

- Industry standard technologies
- Operational readiness of the students for their professional challenges
- Appreciated by the employers
 - Considerable savings in training costs
 - Higher level of readiness for the core business activities
- Added value for the students
 - Competitive-edge
 - Demonstrable skills

Commercial Tools - Constraints

- Licensing agreements
 - Academic licenses: Extra checks
- Usage control
 - Export control
- Onsite access only
 - Remote access is very difficult to manage
- Trans-national education
 - Very challenging

Open & Flexible Learning Env.

- Flipped curriculum
 - Independent learning
- Open educational resources (OER)
 - Free accessibility
- Flexible learning environments
 - Access to learning resources from anywhere at anytime

CASE STUDIES

1 – Digital Forensics

Commercial Tools



Usage Control – HW Dongles

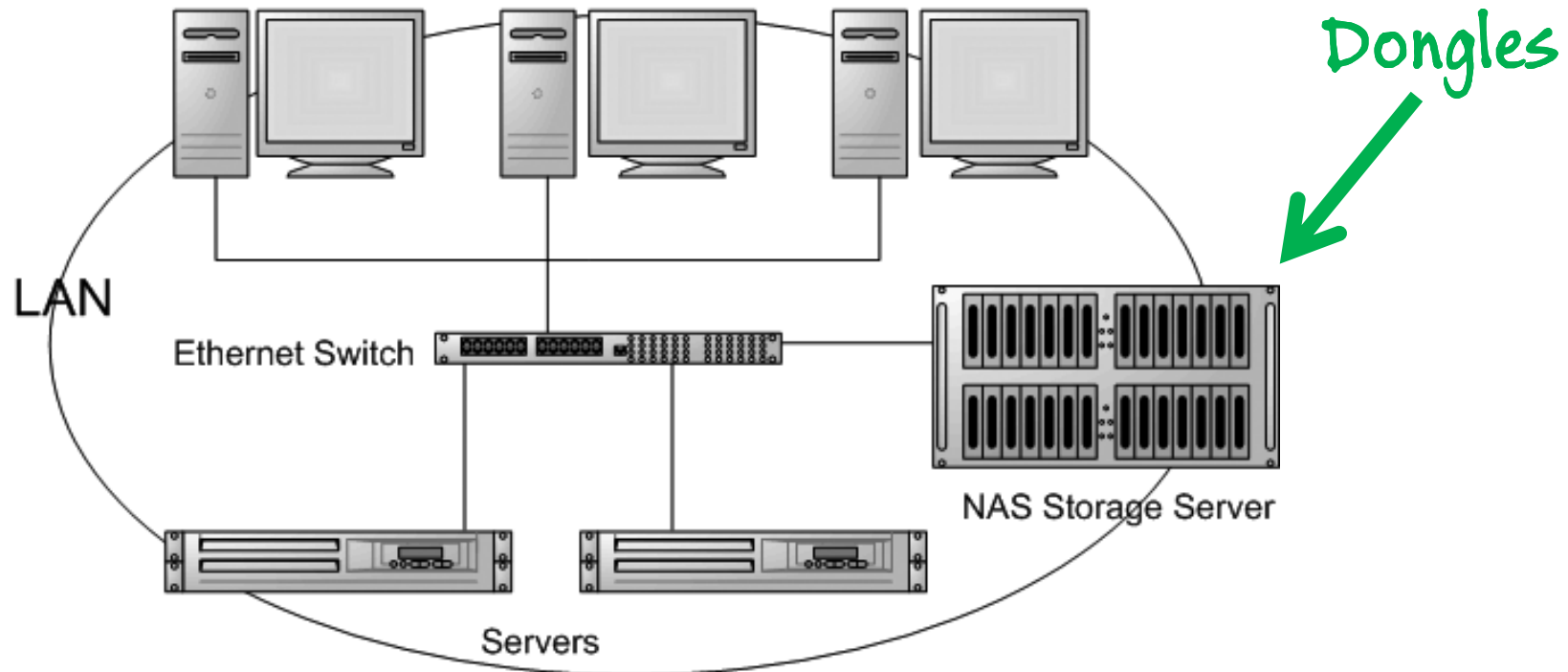


Usage control – SW Dongles

Network Attached Storage

Image source: <http://ipoint-tech.com/network-attached-storage>

Clients

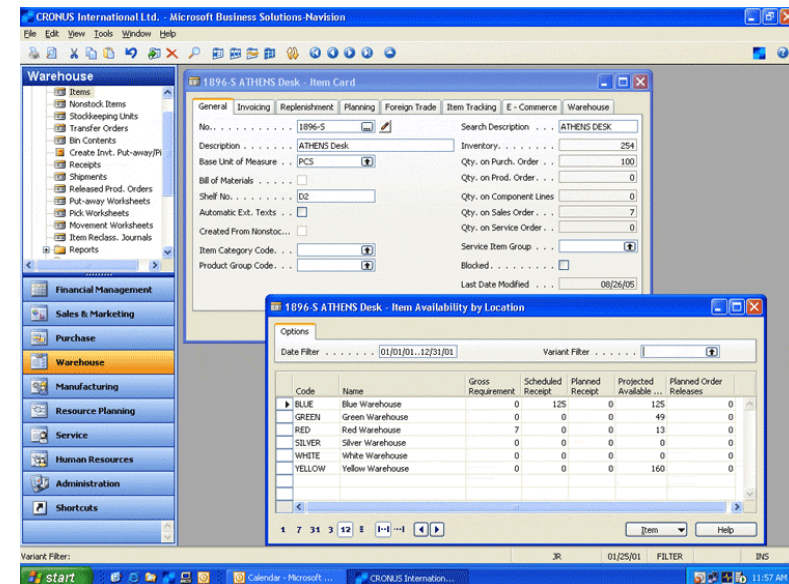


2 – Business Information Tech.



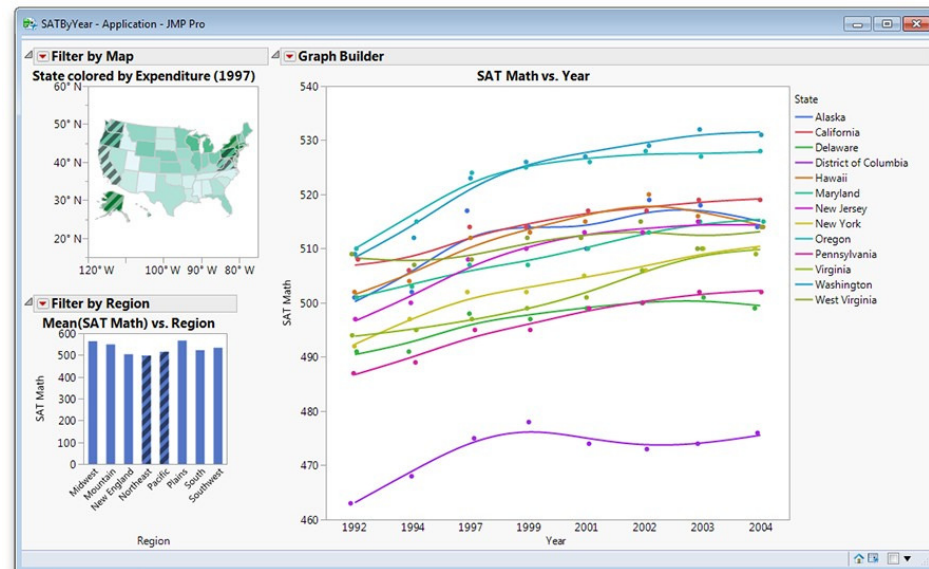
Microsoft Dynamics™ NAV

- Enterprise Resource Planning Software
- Assessed via Logbooks
- Licensing and setup:
 - Virtual Machines
 - Availability



SAS JMP

- Several academic licensing options
- Access outside scheduled lab times can be problematic



Discussions

*Are you experiencing some
similar catch-22 situation?*

*What could be the best
trade-off in this situation?*

*Can a Private Cloud based
solution tackle this problem?*

If there is no alternative solution than what would you choose: Use of industry-standard tools in teaching?

OR

Using other tools in Open Educational Resources?

*How can we offer equivalent
courses online and in Trans-
National Education?*

*Can HEA play a role in
facilitating a way out?*

*Should UK government or
European Commission establish
some guidelines similar to
mobile phones roaming charges?*

Summary

- Use of commercial tools in developing open flexible learning environments is quite challenging
 - Specialised areas such as Digital Forensics add further constraints due to the export control regime of the tools
- More discussions are needed to find optimal ways of
 - Providing flexible learning environment for better student experience
 - Using commercial tools in teaching to make our students more competitive in the job market
- It is very difficult to optimise the current state of affairs at institutional level
 - Involvement of HEA or other public bodies is needed to facilitate the dialogue