Degree Apprenticeships: Creating Joint University-Industry Degrees

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Outline

- Degree Apprenticeships in Digital and Technology Solutions: filling the digital skills gap
- Delivering degree-level teaching and assessment in the workplace
- Supporting and mentoring students in collaboration with employers
- Increasing apprenticeship take-up using the degree pathway
- Opportunities for SME involvement

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Filling the Digital Skills gap

- Government had concerns about the relatively low employment rates amongst computing graduates.
- "Computer science graduates are at greater risk of being unemployed six months after graduation than any other graduate (11% as against 8% average in other subjects) yet employers are desperate to recruit young talent."
- The paradox – a long-standing skills gap in the sector. Estimates are between 3,000 and 10,000 per year (uneven age distribution, volatile graduate numbers: 17,000 in 1995; 37,000 in 2005; 27,000 in 2014). The ONS states that the sector creates 71,000 new jobs every year.
- In some key areas, such as Big Data, the shortage is even more acute: Tech Partnership predicts 56,000 new jobs per year.
- Digital skills are viewed as key to future growth: Digital Economy Unit spans BIS and DCMS.

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Designing the Solution

- Government's proposed solution: a work-based degree to better prepare young people for the workforce.
- A task force set up in September 2014 led by the Tech Partnership involving industry and academics
- Past successes:
  - ITMB – 1,200 students in total; 5% unemployment; 75% with a First or 2:1 compared to 51% in other computing degrees
  - Higher Apprenticeships – at level 4 (equivalent to first year university); 1,000 students in total. Six Trailblazer standards defined and approved.

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Degree Apprenticeship Standard

- Identified core competencies in Information Systems; Systems Development; Data; Cyber Security; Business Organisation; IT Project Management; Computer and Network Infrastructure; Interpersonal, Behavioural and Professional.
- Options to allow specialisation into particular roles: Software Engineer; IT Consultant; Business Analyst; Cyber Security Analyst; Data Analyst; Network Engineer.
- And other roles that don't exist now!
- Develop IT professional practice contextualised in the workplace
- Now approved by BIS/SFA panel
- A scheme for England-resident apprentices only: BIS are now talking to the devolved governments, particularly in the light of the apprenticeship levy

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Stakeholder Benefits

- Employers can attract new talent, particularly high calibre school-leavers, who are keen to earn a degree in a work-based environment. It will allow them to acquire the graduate/post-graduate level skills they need, where the training costs, including the degree, are co-funded by Government.

- The apprentice must be employed and paid a wage throughout, will gain a full degree and gain a head-start into their chosen profession compared with many of their counterparts – a highly attractive offer.

- Universities can strengthen links with local employers and offer more degree programmes that meet employer needs and are accredited by professional bodies, while also having a new product to offer to prospective applicants (possibly from more diverse backgrounds than their full-time intake).

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Who are employers looking for?

- Most applicants are school/college leavers, but some are older.
- Some students are already employed and are reskilling; others have done lower-level apprenticeships.
- Ability, enthusiasm, engagement, team players.
- Strength-based online assessment followed by assessment centre (technical competence plus interview).
- Tuition fee is £27k for whole programme:
  - Employer pays £9k
  - Skills Funding Agency pays £18k
  - Student pays £0
- Can apply direct to employer or through Aston
- https://apprenticeshipvacancymatchingservice.lsc.gov.uk/navms/forms/candidate/apprenticeships.aspx

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Student Experience

- Positive features:
  - Mode of learning (applying theory directly in their job)
  - Take responsibility in a structured framework
  - High academic performance as relevance of material is immediate
  - No debt
  - Certainty of employment
- Negative features:
  - Less contact with other students on programme
  - Fewer opportunities to meet students studying other subjects
  - Not the full 'campus experience'
  - It demands consistent study and hard work

One Degree – Two Streams

The Outcome

- Degrees lead to the award of full Aston BSc
- Active, creative IT professionals
- Depth of knowledge

Relevance and Flexibility

▶ Large portions of the course can be tailored to the student.

▶ Up to 60 credits (25% of the course) of **optional modules** to allow students to specialise.

▶ Both streams have major **group** and **individual (synoptic) projects**
  ▶ We are happy to work with employers to tailor projects to:
    ▶ employers' needs.
    ▶ students' working responsibilities.

▶ Each student has a **personal mentor** to help:
  ▶ Aston to fit coursework to students' roles,
  ▶ students to find opportunities to apply their learning in practice.

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Modes of Delivery

Work-based

Distance

Face to Face

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Distance Learning

- Majority of the course delivered through **virtual learning environment** Blackboard.

- Lectures recorded for students to watch (and re-watch) **asynchronously**.
  - Supported by other self-study **learning objects**.

- Labs/tutorials/seminars delivered through "**virtual classroom**" Blackboard Collaborate.
  - Scheduled outside normal working hours (currently 8pm)
  - Often repeated to allow flexible scheduling
  - Backed by virtual **office hours**.

Benefits of Distance Learning

▶ Flexible about when much content is consumed.

▶ No time wasted in travelling to a central location

▶ Less disruption to business than block release

▶ Students can revise & repeat recorded material
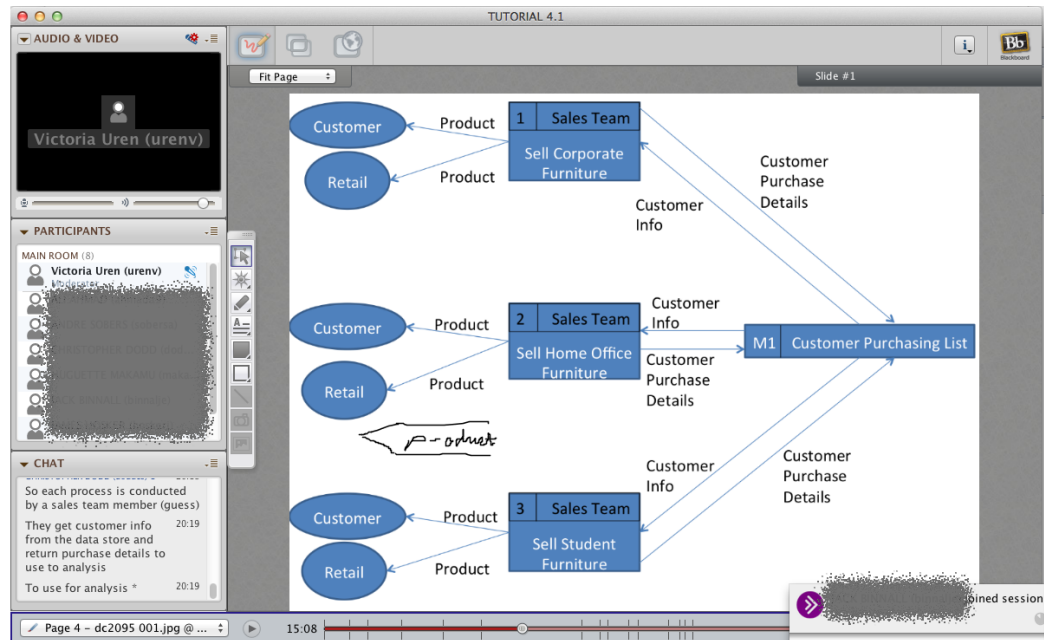
Employers

Advantages of Aston's Programme

▶ We already have a viable cohort in-place:
  ▶ More students means more flexibility of module choice
  ▶ Track record of high-performing students

▶ Depth and breadth of experience:
  ▶ Interaction with other companies' apprentices adds context

▶ Assurance:
  ▶ Based closely on existing programmes endorsed by **e-skills** and the **BCS**.

▶ Work-based study at student's convenience

Degree Apprenticeship Courses

- Be careful – Higher Apprenticeships can be at level 4 (or above) = 1st stage of University
- Aston offers
  - Digital & Technology Solutions
  - Chartered Manager
- Others https://www.gov.uk/government/collections/apprenticeship-standards
  - Nuclear Scientist and Nuclear Engineer
  - Chartered Surveyor
  - Embedded Electronic Systems Design and Development
  - Aerospace Engineering
  - Aerospace Software Development Engineer
- Power engineering in development

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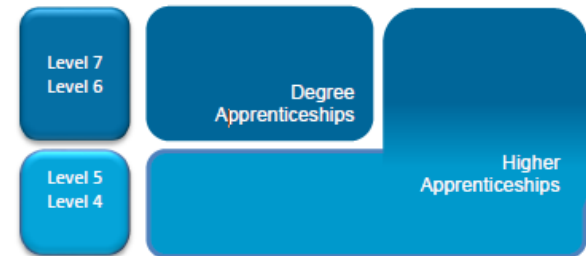
Summary

- 2 streams for IT-oriented junior talent
    - **Software Engineering** for those focusing on technical computing.
    - **Business Information Systems** for those in more business oriented roles.

- Work-based blended learning:
    - Majority **distance learning** designed to suit those in work wherever in England they live

- Commitment to work with employers to ensure programmes deliver the right skills.
- http://www.aston.ac.uk/study/undergraduate/courses/eas/degree-apprenticeships-in-technology-solutions/

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