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Tackling the Graduate Skills Shortage in the UK Electronics Sector

Why, What and How?

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Outline

- Why?
  - Electronics and the UK's Electronics sector.
- What?
  - Understanding the nature of the graduate shortage.
- How?
  - How the UKESF is tackling the challenge.

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Electronics. The Future

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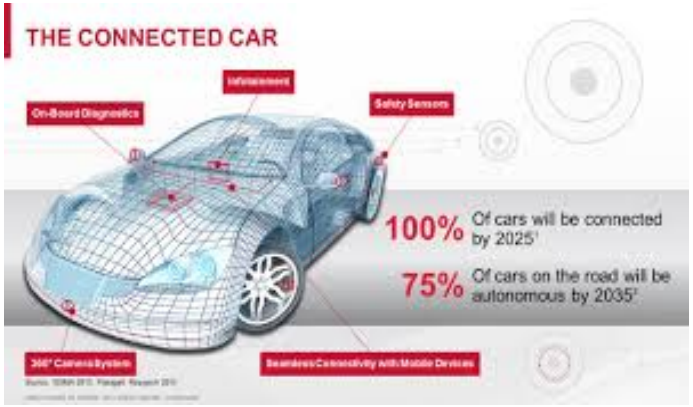
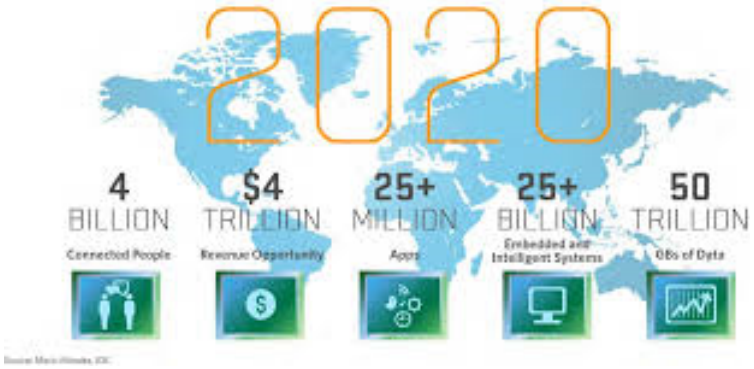
Electronics. The Future





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The UK's Electronics Sector

- **The UK Electronics industry is a world leader**
  - 5th largest globally in terms of production
  - European leader in systems design. Home to 40% of Europe's semiconductor design houses
- **It is big. In 2014**
  - Number of Enterprises. There were **45,175** enterprises in the sector, of which 1,325 had more than 50 employees and of these 256 were 'large' i.e. more than 250 employees.
  - Employment. The total number employed in the sector was **1,009,711**. This equates to 3.28% of the total UK working population.
  - Contribution to GDP. The sector's direct contribution to UK GDP was £98,635.94M. This is **5.76%** of total GDP.
- **It is growing, fast. Since 2012**
  - The number of enterprises has grown by 14,806 (49% increase).
  - The number of employees has increased by 152,737 (18%).
  - The contribution has grown by £20,282M (26% increase) which is n increase of 0.38% to GDP (up 7%).

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Graduate Shortage – Supply and Demand

- Demand……
  - Large and growing Electronics sector in the UK.
  - Age profile of current workforce.
  - Impact of Govt's immigration policies (Tier 2 Visas)
- Supply……
  - Overall number of 18 year olds is falling.
  - Electronics is a **RELATIVELY** unpopular choice for UK students.
- In the 10 years between 2005 and 2014, overall acceptances on Engineering first degree courses has increased by **50.4%** (to 23,325).
- In the same period, acceptances on E&E Eng first degree courses have increased by **9.3%** (to 3,350).

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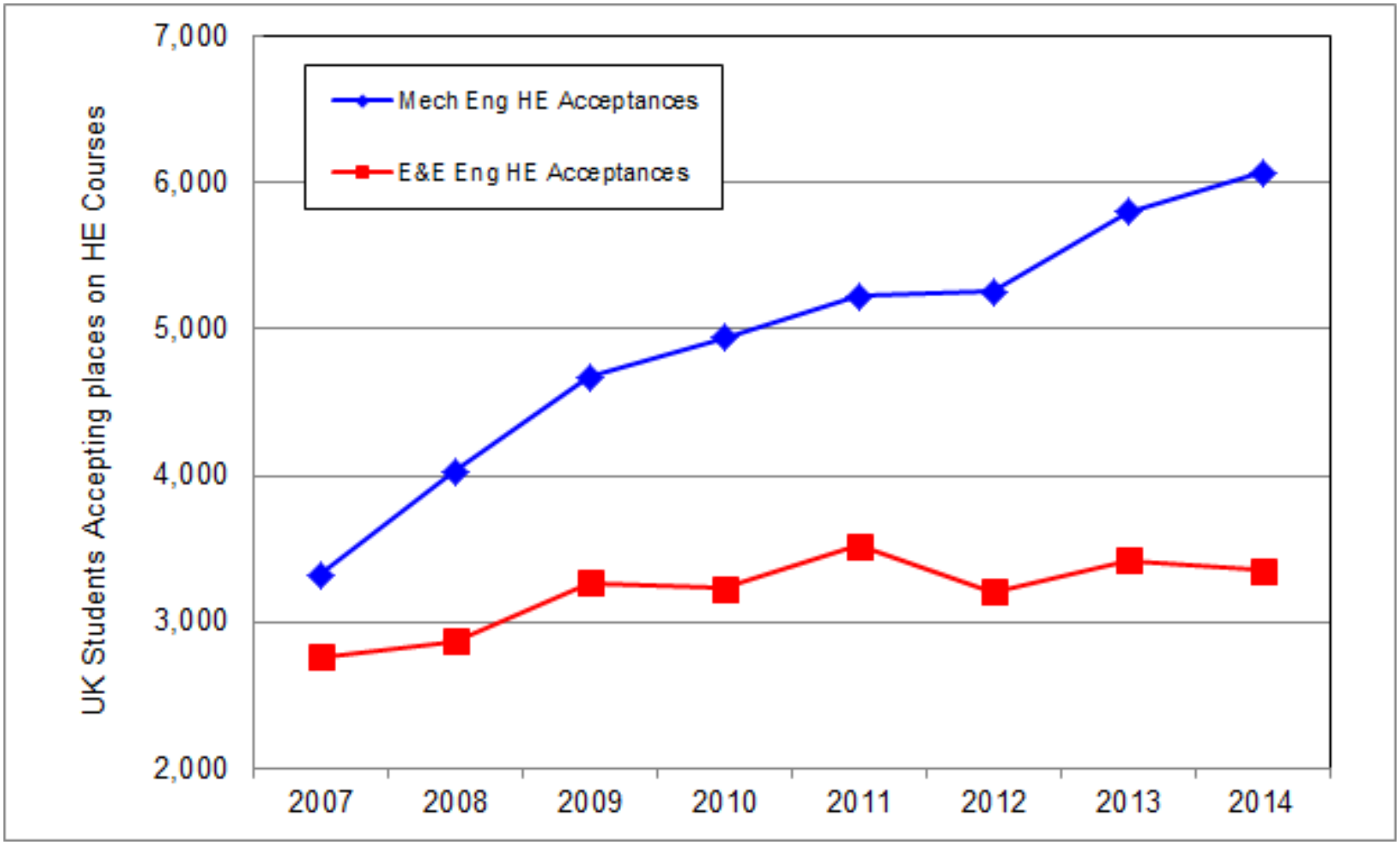
Mech Eng compared with E&E Eng



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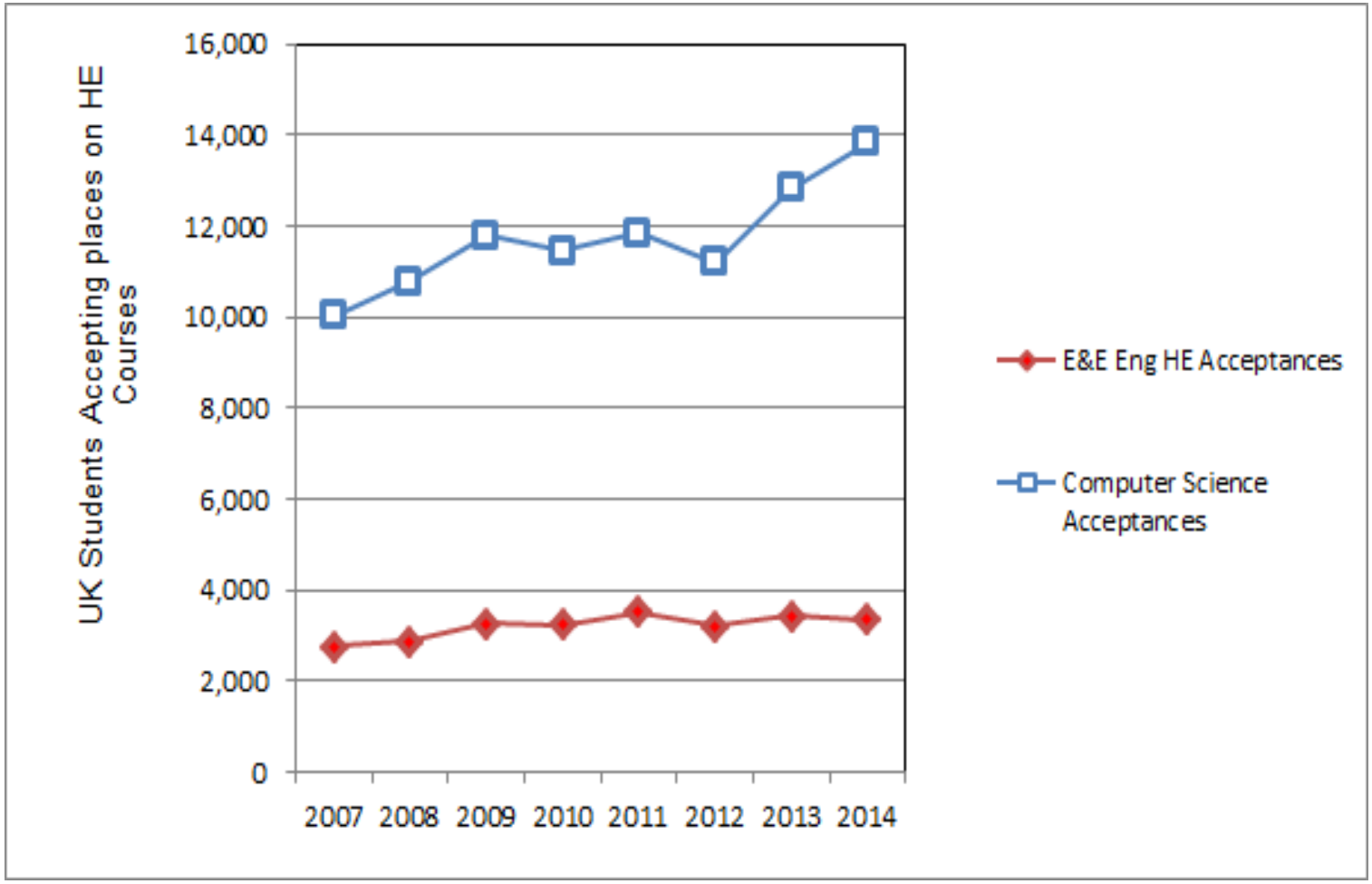
Computer Science compared with E&E Eng



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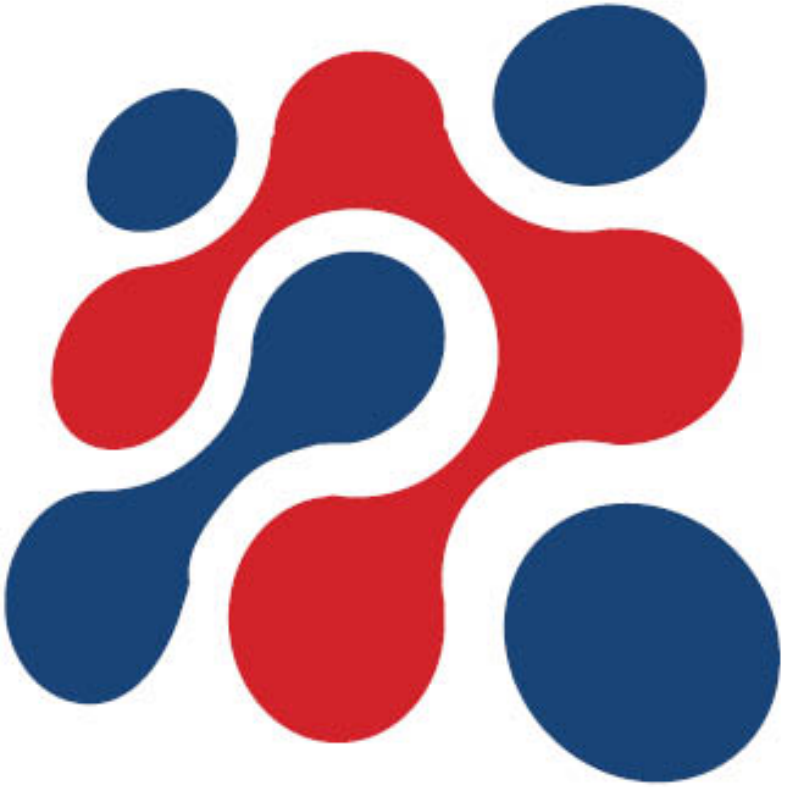
Graduate Shortage – Females

- On average, across STEM there are 9% of females in the engineering workforce.
- In the Electronics sector, the figure is **6%.**
- Female acceptances on E&E Eng degrees have fallen by **38.6%** (to 469), which is only **9.7%** of the total number of students.



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What is the UKESF?

- A charitable foundation.
- A collaboration between industry, universities and the public sector.
- Founded in 2010.
- Small beginnings:
  - Five Universities, Six companies and 22 scholarships.

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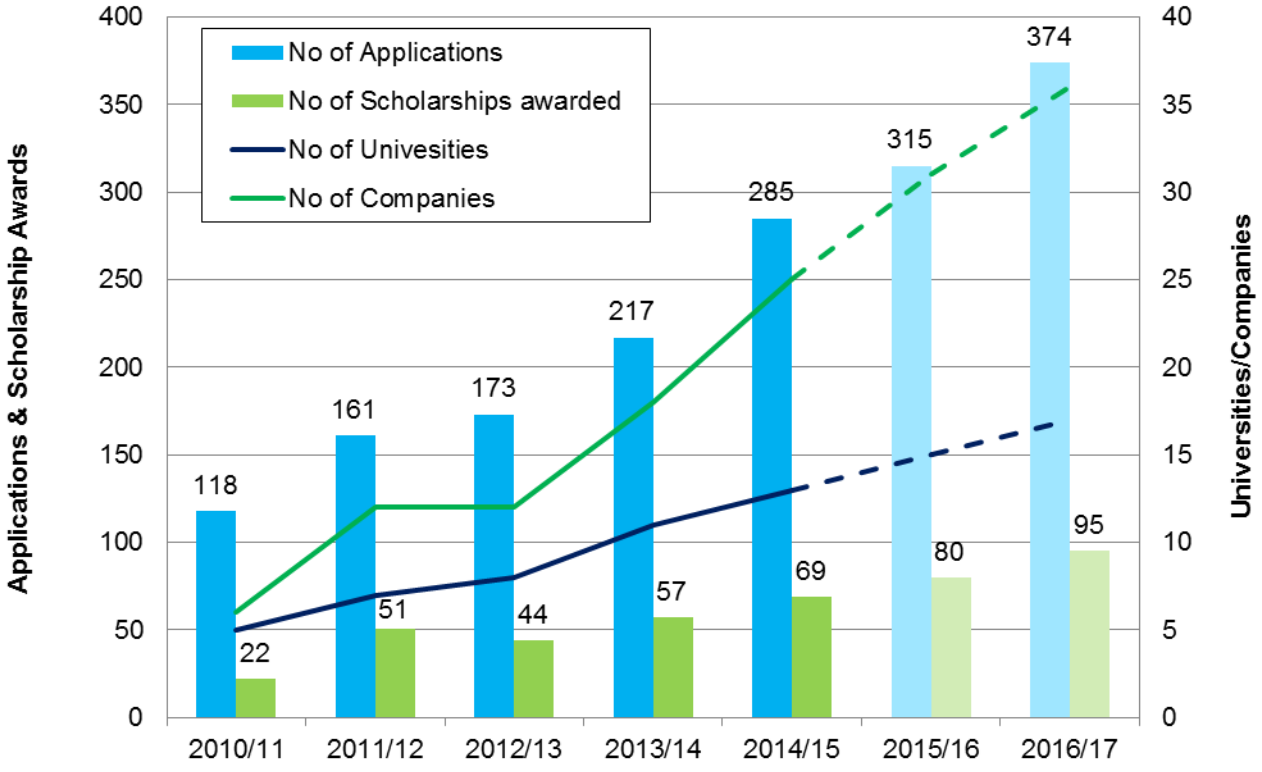
Scholarships: History & Targets



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Scholarship Sponsoring Companies

UKESF Scholarship Scheme - Why?

Source. Engineering UK 2015 report "*The State of Engineering*"

- Employers (46%) reported the **shortage** of STEM graduates.

- However, even more employers (48%) had concerns about the **quality** of STEM graduates

- Specific issues reported by employers were:
  - Lack of workplace experience (36%)
  - Weaknesses in attitudes and aptitudes for working life among applicants (30%).
- By undertaking work placements and professional development as part of the UKESF scholarship, students improve their graduate employment opportunities

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UKESF Partner Universities

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Partnership with Universities

- Strengthening partnership beyond Scholarships to include:
  - Collaborating on Electronics outreach projects.
  - Career and employability fairs.
  - Supporting student Electronics Societies.
  - Promoting specific areas of Electronics e.g. RF Engineering.
  - Needs of Foundation Year students.

- Degree Apprenticeship
  - Embedded Systems Design & Development Engineer (Level 6)

UKESF – Mission

There is a need to tackle the ongoing skills shortage in the sector and to support the **Electronic Systems Community** vision of "*making life smarter for everyone, to drive commercial success and, ultimately, economic growth for the country*".

Therefore, the Mission of the UKESF is:

"to encourage more young people to study Electronics and to pursue careers in the sector".

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UKESF - Strategic Objectives

- To ensure more school children are aware of Electronics.
- To show these children and their parents that there are exciting and worthwhile careers available in the Electronics sector.
- To provide opportunities for them to develop their interests in Electronics, through to university study.
- Once at university, to ensure that undergraduates are encouraged to pursue careers in the Electronics sector and they are helped to develop their work-readiness skills and experience.

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Education Activity Partners

EDT
Inspiring future engineers & scientists

smallpeice

WISE a campaign to promote women in science, technology and engineering

Robogals

IET The Institution of Engineering and Technology

Prince's Trust

BBC micro:bit

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Website (Re-) Design

bhd creative

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