London 4 November 2010

The Future of Apprenticeships

Apprenticeships and the SME sector

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Senior Executive – Programmes

On behalf of **Prof Sa'ad Medhat**

Background to NEF

NEF is an independent charity working with educational providers, key partners and stakeholders to support the advancement of technical and vocational education.

- Empower change in individuals (teachers, trainers, tutors), providers and industry
- Enhance capability of individuals, providers and industry
- Enrich teaching and learning professionalism
- Engage all the key national and regional stakeholders

Our aim:

A positive impact on learners, providers, industry, and communities.

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NEF
(New Engineering Foundation)

1. Instigating Research, Supporting Policy & Advocacy
2. Supporting Professional Development
3. Enabling KTT in FE
4. Catalysing Innovation, Assuring Quality

neweng.org.uk

Working with Businesses

Accuracy International
Airbus UK
Alstom Power
AMEC
AMP Rose
AstraZeneca PLC
Augusta Westland Ltd
BAA
Babcock Infrastructure Services
BAE Systems
Barclays Bank PLC
Bentley
BMW
BNFL
Boots
BP
British Gas
BT
Caterpillar
CCRLC Daresbury Laboratory
Cenit Desktop
Centrica PLC
Chemtech International Limited
Claas UK Ltd
Connectfree
Coors Brewery
Delphi Systems
Developer Solutions
Edwards
Em Power Training
EOn
Epson
Eurostar
ExxonMobil
FaberMaunsell
Fairline Boats Plc
Ford Motor Company
FW Developments/Dynojet UK
GCD Security Ltd
GE
General Dynamics UK Ltd
Getrag Ford Transmission
GKN
Goodrich Actuation Systems Ltd
GSK
Hanson Building Products
Heliwest Ltd
Heysham Nuclear Power Station
Imperial Tobacco
Independent Forgings and Alloys Ltd
Indesit
Industrial Automation Ltd
Innovative Technology Ltd
Intechweb
J&E Halls
Jaguar
Jaguar Cars
JCB
Johnson Control
Kennametal UK Ltd
KPMG
Labman
Lagan Construction Group
Lance Owen
Lawday Engineering
Lely UK
Lever Faberge Limited
Leyland Trucks Ltd
LJ Group
Lockheed Martin UK
Logica
Magnox North
Mahle Filter Systems
Malvern Instruments Ltd
Marshall Aerospace
McLaren Racing
McVities
Messier-Dowty
Micrometric Techniques Ltd
MKW Engineering Ltd
Moore Racing
MyTravel Engineering
News International plc
Nissan Motor Manufacturing (UK)
Parker Hannifin (UK) Ltd - Patronics International
Philips Centre
Philips Electronics UK Ltd
Pipex Limited
Price Waterhouse Coopers
QinetiQ
RAF Henlow
RailTrack
Rapid Electronics Ltd
Rolls-Royce Motor Cars Ltd
Rolls-Royce Power Engineering Plc
Scania Training
Schott Industrial Glass
Schulter Solutions Ltd
Scothall BMW
Siemens Industrial Turbo
Solent Composite Systems
Southern Water
Terminal 5/AMEC
Tesco
Thales UK plc
The Boots Group Plc
The Honda Institute
TNT Aircraft Maintenance
Torr Scientific Ltd
Total Communications Ltd
Toyota Motor Manufacturing (UK)
Transco Plc
Tritec Developments Ltd
Tubelines
Unilever
Unimatic Engineers Ltd
Utile Engineering
Vauxhall Motors
Vodafone Group Plc
VT Group plc
Ward Hi Tech Ltd
WBB Materials
Westland Helicopters
AND MORE

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Working with Colleges

Accrington & Rossendale College
Amersham & Wycombe College
Barnet College
Bedford College
Blackburn College
Boston College
Bradford College
Bridgend College
Bridgwater College
Bromley College of Further & Higher Education
Brooksby Melton College
Broxtowe College
Burnley College
Burton College
Calderdale College
Carlisle College
Carnegie College
Carshalton College
Central Sussex College
Chesterfield College
City College Birmingham
City College Brighton and Hove
City College Plymouth
City of Bristol College
City of Sunderland College
City of Westminster College
City of Wolverhampton College
Coleg Glan Hafren
College of North West London
Cornwall College
Darlington College
Deeside College
Derby College
Derwentside College
Doncaster College
Dudley College
Ealing, Hammersmith & West London College
East Riding College
Eastleigh College
Exeter College
Fareham College
Fermanagh College
Forth Valley College
Gateshead College
Goreseinon College
Grantham College
Hartlepool College
Hastings College
Havering College
Herefordshire College
Hertford Regional College
Highbury College
Hull College
Isle of Wight College
James Watt
Kingston College
Leeds College of Building
Leeds College of Technology
Leicester College
Lewisham College
Lincoln College
Lowestoft College
Macclesfield College
Merton College
Mid Kent College of H & FE
Mid-Cheshire
Motherwell College
Nelson & Colne College
Newcastle College
Newham College of Further Education
North Highland College
North Nottinghamshire College
North Warwickshire & Hinckley College
North West Institute
Northampton College
Norton Radstock College
Oaklands College
Oxford & Cherwell Valley College
Park Lane College Keighley
Preston College
Reaseheath College
Redbridge College
Redcar & Cleveland College
Salford College
Sheffield College
Solihull College
Somerset College of Arts and Technology
South Cheshire College
South Devon College
South West College
Southgate College
St Helens College
Stafford College
Stanmore
Stourbridge College
Sussex Downs College
Tameside College
The Oldham College
Tresham Institute
Uxbridge College
Wakefield College
Walsall College
Warwickshire College
West Cheshire College
West Nottingham College
Writtle College
Yeovil College

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Apprenticeships and the SME sector

LOOKING...

Looking backwards…

- **Apprenticeships**
  - an immersive several-year experience
  - for one craft/skill/trade
  - with one expert
  - or as a travelling journeyman
- **Current model**
  - Modern apprenticeship scheme born 1993 - occupational competence and no specific technical learning (Level 3)
  - Advanced apprenticeships (Level 4)
  - Trade specific

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A Modern Apprentice

Student	Modern Apprentice	Employee	???
College based	Part College	Single company	?
No pay	Part on the job	Paid	
Classroom training	Low pay	Responsibilities	
Mainly academic knowledge	Jointly responsible	CPD	
	Technical skills	Practical skills	

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Looking over…

- **To other countries**
  - Australia with wide acceptance and expectation, use of Group Training schemes
  - *Fachhochschulen* in Germany and Austria
  - India and high-tech IT skills
- **What can we learn from these?**
  - Need recognition and status
  - Think about transferability, organisation and flexibility
  - High tech skills – niche and cross-sector

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Looking sideways…

- **Apprenticeship schemes in large corporations**
  - Successful schemes
  - Weaknesses and failings
  - Innovation and collaboration

Organised
- Structured programme
- Company culture

Trade specific
- Hairdressing vs. construction
- Gender segregation
- Pay and conditions

London Consulting Engineers
- Consortium
- Small pool of apprentices
- Common off-site training
- FE college programme tailored for the consortium

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Looking wider…

- **Widening participation**
  - What are the benefits to SMEs?
  - The wider picture

- **Progression**

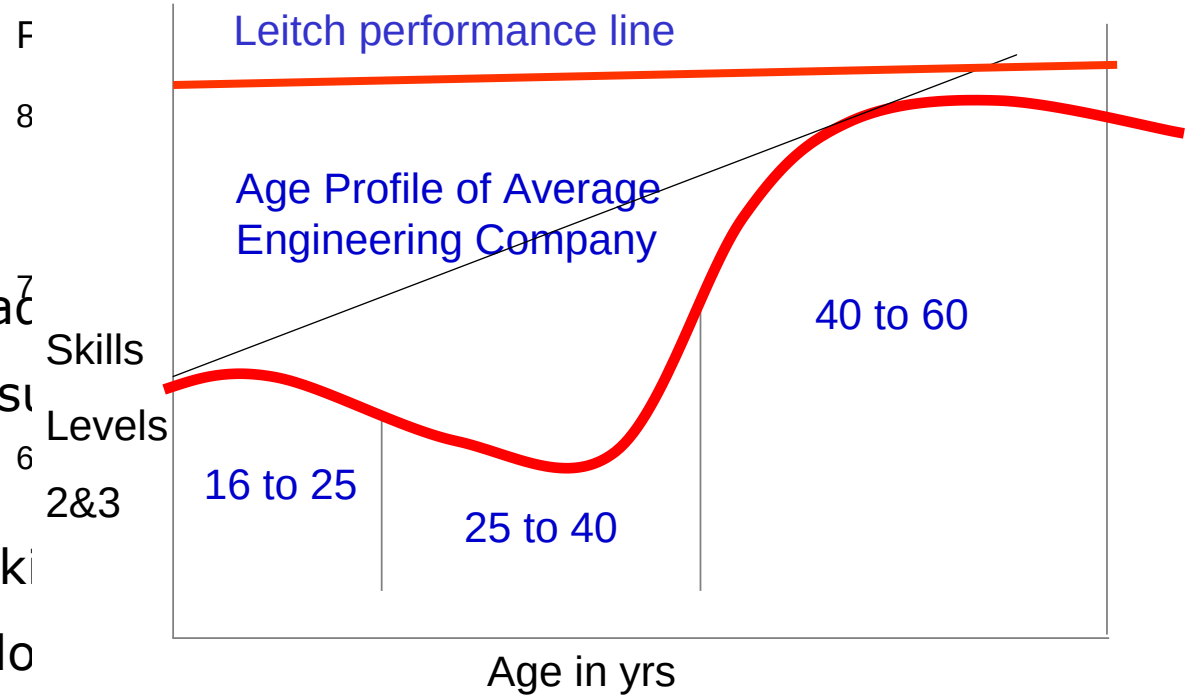
  Dual routes – acad

  Dealing with unusu

  returners

  New ways of worki

  Changing technolo



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Looking to education…

- **New models in learning and teaching**
  - QCF – bite-sized learning units (out with long monolithic courses)
  - Learning outside the classrooms
  - Collaborative learning
  - ICT supported teaching (remote, web-based, mobile)
- **Portfolio-based learning**
  - Personalised and JIT
  - Employability: agility / mobility / currency
  - Technology specific skills
  - Remote learning and WBL
  - Teacher as facilitator

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Looking inwards…

- **What are the requirements of SMEs?**

  How different are these to those of larger companies?

  – requirement of immediacy

  – specific technical skills

  – general business awareness

- **Why should SMEs participate?**

  "Let me count the ways…"

Aquafab
- Small niche supplier
- Workforce of 8
- Increased skills > increased turnover

Over 80% of people are more likely to use a business if it offers Apprenticeships to young people.

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Apprenticeships and the SME sector

LOOKING FORWARDS

Best Practice and Overcoming Barriers

- **How to enable SMEs to benefit from the modern apprenticeships?**

Remove barriers:

Employment requirements	•Rights and responsibilities •Several years' commitment
Management	•Understanding how the system works •Resources and time
Apprentice support	•Providing up-to-date guidance and mentoring •New learning spaces
Money	•How to tap into funding •Optimising costs, minimising disruption

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The T-shaped technologist?

Employability skills

Life-long learning

Transferable hi-tech skills

Familiarity with sector & industry

Business awareness

STEM theory

Specialist knowledge

Practical know-how

Progression academic & vocational

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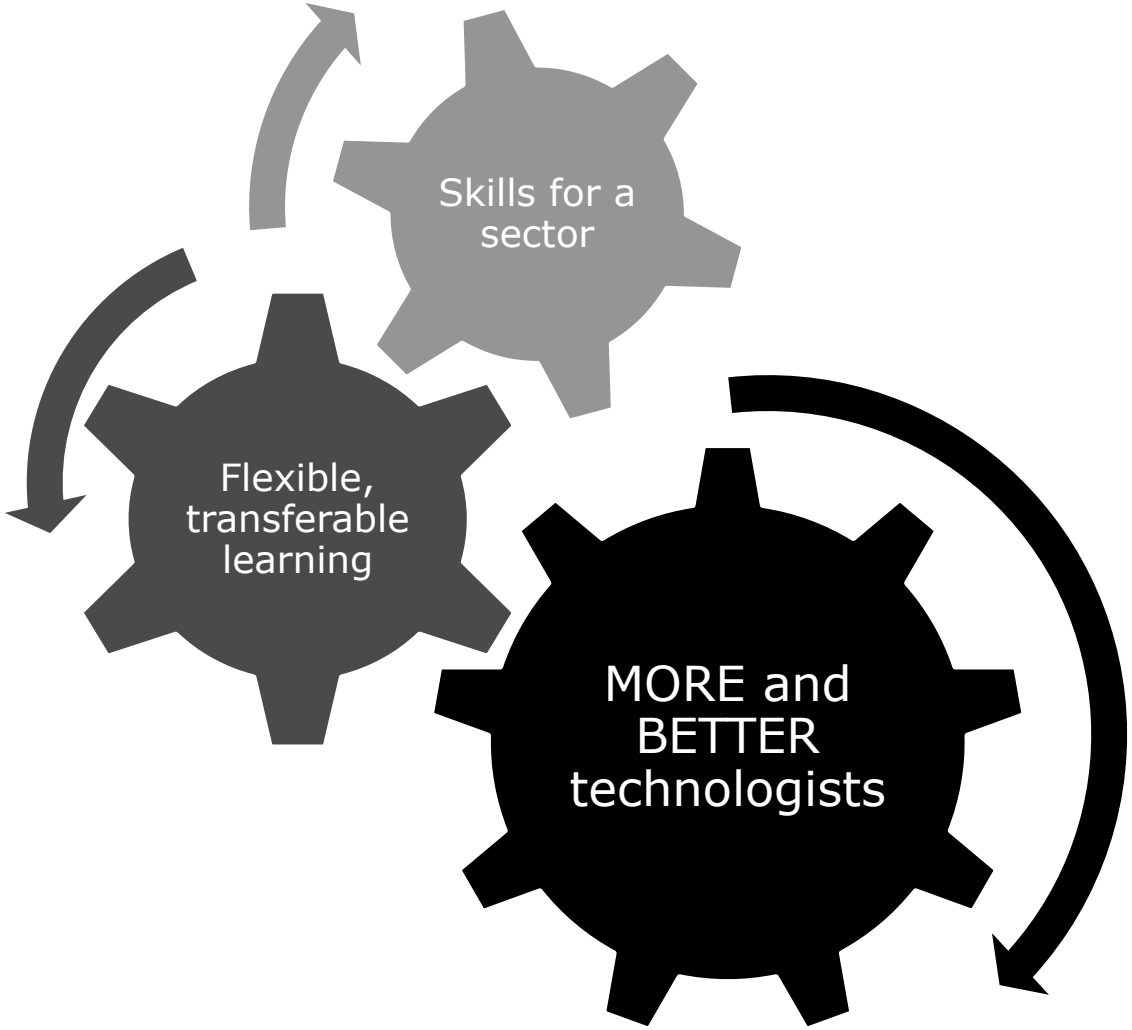
A broader view of “apprenticeships”



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A Really Modern Apprentice

Student	Modern Apprentice	Employee	The New Apprentice ??
College based	Part College	Single company	Several companies and providers
No pay	Part on the job	Paid	WBL + flexible remote learning
Classroom training	Low pay	Responsibilities	Robust guidance and development
Mainly academic knowledge	Jointly responsible	CPD	Transferable hi-level skills across sectors
	Technical skills	Practical skills	Multi-disciplinary, -cultural, -skilled

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Some suggestions…

- **A collaborative model**
  - form consortia of interested partners in a sector
  - a common programme of guidance and support
  - of consistent, high quality training on-site, off-site, on-line
  - with a pool of apprentices and providers
  - and nugget-sized learning units
- **Pre-apprenticeship support**
  - to ensure individuals are directed towards a programme that is aligned to their own requirements and that of the SMEs

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Benefits…

- **For the companies**
  - No long commitment to one individual
  - Chance to "check out" several potential permanent workers
  - Support in managing the apprenticeship
  - Apprentices hit the road running
- **For the apprentices**
  - Mentoring and guidance by IAG experts off-site
  - Opportunity to experience several different companies
  - Personalised and flexible training

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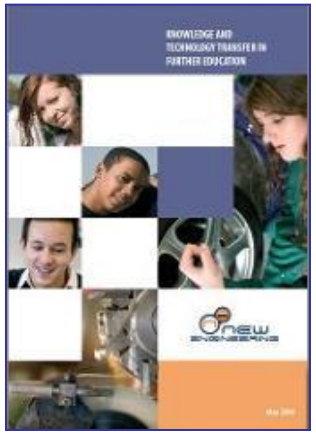
Apprenticeships and the SME sector

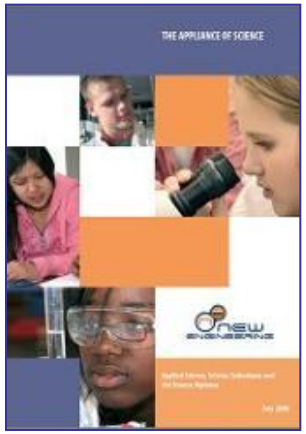
LOOKING AT NEF

Instigating Research, Supporting Policy & Advocacy

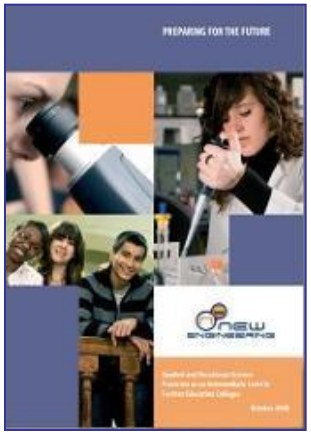
Emerging Technologies- Emerging Markets



Knowledge & Technology Transfer in FE



The Appliance of Science



Preparing for the Future

The Path to Productivity

Technical Briefings

Composite materials

Biotechnology

Advanced manufacturing

Low carbon technologies and skills

Nuclear – commissioning & decommissioning

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Supporting Professional Development

Industrial Fellowship Scheme

- Impacting over 140,000 STEM learners
- Energising over 360 STEM teachers and trainers
- Industry contribution £2.13 m (direct and in kind)

Theme for 2011 Call

Emerging Technologies for the Growth Sectors of Tomorrow

Advanced materials, including composites and applications

Bioscience, including personalised medicine, synthetic biology

Computing, communication and cognition

Low carbon energy sources and resource efficiency

Electronics, photonics and electrical systems

High value manufacturing

Masterclasses

- 30 immersive & cutting edge delivered in-company
- over 600 STEM teachers and trainers
- Focused on new and emerging technologies (Renewables, Composites, Nanotech, Biotech, Aerospace, …)

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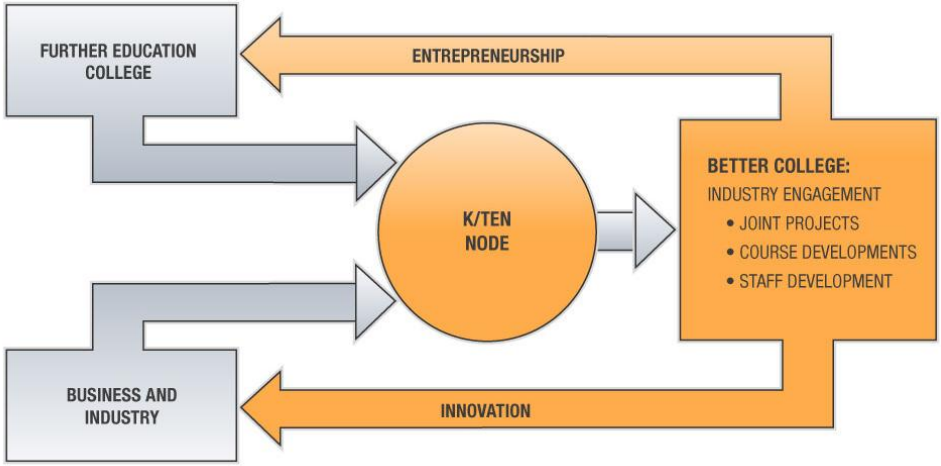
Enabling KTT in FE

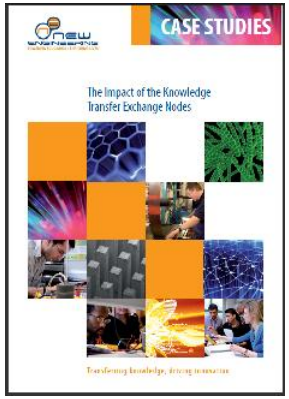
Technology Strategy Board
Driving Innovation

Knowledge Transfer Partnerships

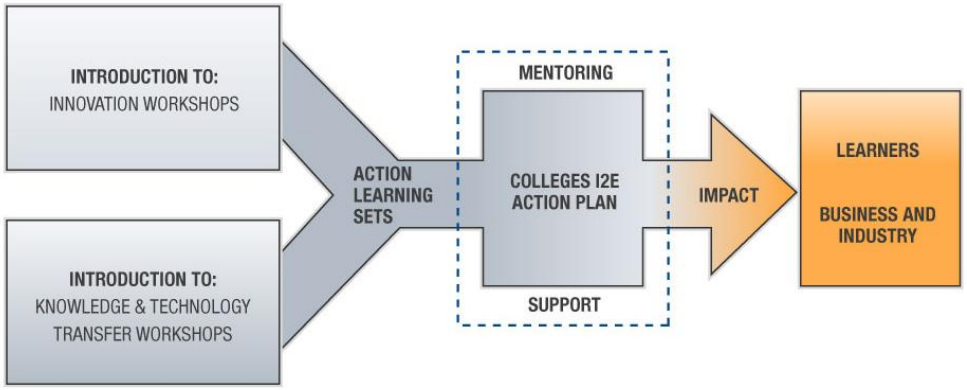
Knowledge & Technology Exchange Nodes (KTENs)



Regional KTE Hubs for Low Carbon



Innovate-to-educate



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Catalysing Innovation

- **Future Tech**: e-learning resources in emerging technologies
- **Active Leadership and Innovation**, **CPD for Open Innovation**, **Innovation Accelerator**
- **Technician's Council**
- **Certified Technologist –** accredited programmes
- **NEF Diamond** – a strategy to change management
- **NEF Assured** and **STEM Assured** – assuring vocational training in industry and multi-disciplinary /cross-curricular courses for industry

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NEF PAID

- **Pre-Apprenticeship Induction and Development**
  - A programme of an assured high quality across your organisation , consortium and sector
  - Training carried out off-site at an FE college of your choice
  - Guidance and direction before commitment
- **Benefit from the apprenticeships scheme**
  - Have work-ready apprentices with life, study, employability skills
  - Access a national network of FE providers and online training units
- **Employer-focused support to prepare for and facilitate the intake of apprenticeships**

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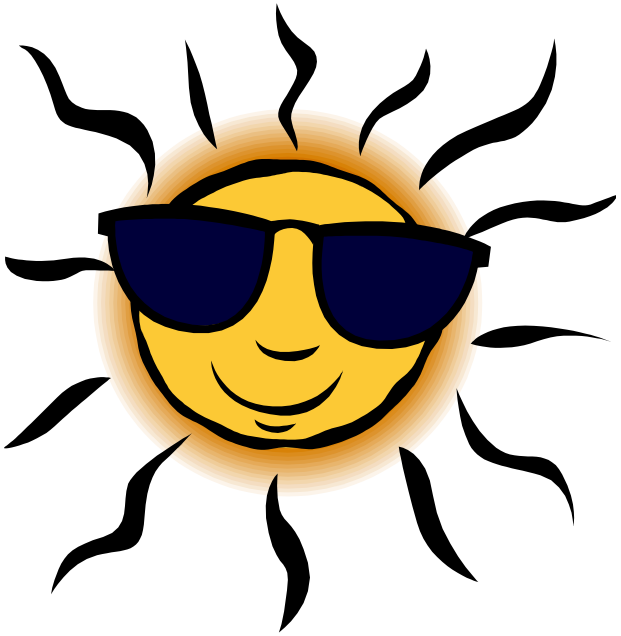
The future is bright…

A collaborative apprenticeship scheme
-> better opportunities for individuals and SMEs



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Thank You

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