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National HE STEM  
Programme

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# A National High Level Skills Strategy

- **The Government's high level skills strategy has two main goals:**
  - **to produce more, and more employable, graduates; and**
  - **to raise the skills and capacity for innovation and enterprise of those already in the workforce.**

**Higher Education at Work - High Skills: High Value  
(DIUS, 2008)**

# HEFCE HE STEM Programme

- Two streams of activity:
    - Demand-raising and Widening Participation
    - Higher-level skills & employer engagement
  - Investment: ~£20million
  - Disciplines: Chemistry, Engineering, Mathematics and Physics
- 
- Host HEI Bid Stage – November 2008
    - University of Birmingham selected
  - Development Phase – January to March 2009
    - submit proposal for National Programme by 20 March 2009
  - Implementation Phase – April to July 2009
  - Delivery Phase – August 2009 to July 2012

# The Vision

- **Good Practice:** Develop innovative and transferable models across STEM areas, through the integration and strategic development of existing activities, initiatives and good practice
- **Embedding:** Embed these models nationally to create sustainable activities
- **Delivery:** Deliver significant and sustainable increases in the supply of graduates and trained staff equipped with the skills needed by employers

# Our Key Principles

- **Partnership:** Across both the development and delivery phases, our programme will facilitate meaningful contributions from a wide range of stakeholders working in collaborative partnership in a flexible but structured way.
- **Integration:** There is a need for a sustained and fully-engaged dialogue between individuals and organisations representing discipline and thematic (widening participation, skills development, and employer engagement) perspectives, in order to deliver a strategic and holistic response to challenges currently surrounding STEM

# Model for the Development Phase

## Executive Group

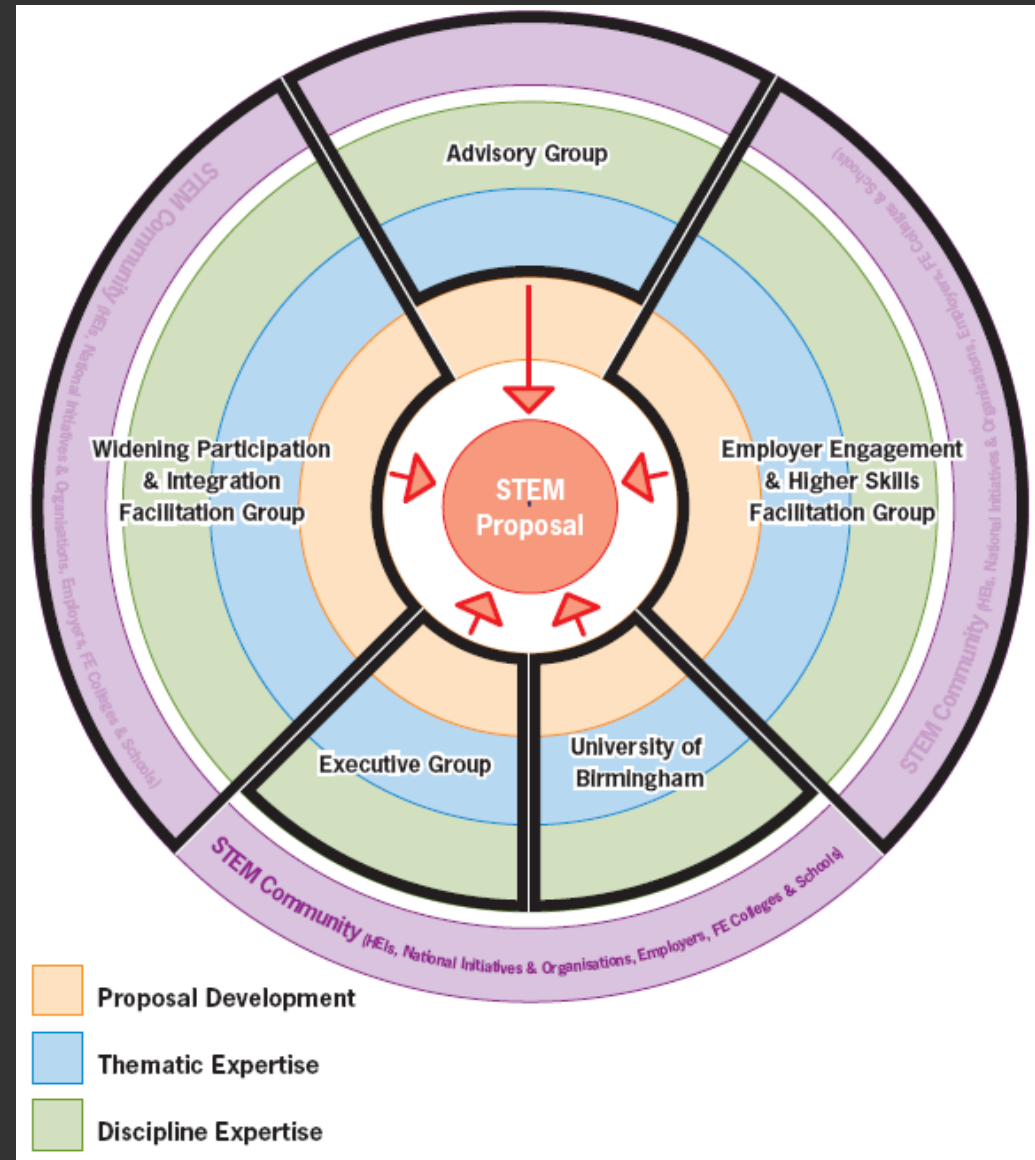
- To oversee and manage the Development Phase
- Key responsibility: To deliver the bid to HEFCE
- Meet regularly – every two weeks

## Advisory Group

- To collect and collate views from individuals and organisations
- Key Responsibility – To advise and develop the aims and objectives of the National Programme
- Meet three times

## Facilitation Groups

1. Widening Participation
2. High-level skills and employer engagement
  - To undertake a nation-wide consultation
  - Key Responsibility – to engage with the community and collect views
  - Meetings around the UK and collect views via e- infrastructure
  - Membership – Open invitations



# The HEFCE Funded Pilot Projects

- Commissioned by HEFCE in 2005 and running until July 2009 (more maths grads to January 2010).
- Four (regional) pilot projects to raise demand for HE provision:
  - Chemistry for our Future
  - Stimulating Physics
  - London Engineering Project
  - More Maths Grads
- Activities to be rationalised and integrated for national roll-out.

# Summary Outcomes from National Consultation (1)

## □ Communication

- Significant existing activity
- Limited levels of communication between initiatives
  - ‘The landscape is fragmented’

## □ Requirements of the National Programme

- To draw upon and build upon current activities
- To provide a co-ordination function



# Summary Outcomes from National Consultation (2)

## □ Innovation

- An appetite for new innovation – ‘push at the boundaries’
- Innovative approaches are required for workforce up-skilling and re-skilling

## □ Requirements of the National Programme

- Create headroom for innovative practice
- Infrastructure that would facilitate and support innovation

# Summary Outcomes from National Consultation (3)

- Widening participation and increasing demand
  - Emphasis on the approach rather than (new) activity
  - Build on existing activity
  - More collaborative, less competitive, approach
  
- Requirements of the National Programme
  - An (integrated) STEM-led approach
  - Careers, Teaching-Fellows, Student Ambassadors
  - Work on retention – reduce wastage

# Summary Outcomes from National Consultation (4)

- Higher-level skills and employer engagement
  - Improve communication
  - Practical and cultural changes to support more effective engagement
  - Better understanding of benefits of engagement between employers and HEI
  - Mismatch between employer needs and graduate skills
  
- Requirements of the National Programme
  - Involvement of employers
  - Clear understanding of requirements
  - Involvement and be-spoke provision for SMEs
  - ‘Universal’ support for increased exposure to the workplace during study

# The Aim

To contribute to the development of a national Higher Education STEM sector which

- Engages collaboratively to increase and widen participation
- Promotes supports and champions the STEM disciplines, and
- Is increasingly responsive to the skills needs of both employers and employees

in order to support the development of a strong, diverse and sustainable workforce that will meet the economic needs of the UK for the 21<sup>st</sup> Century

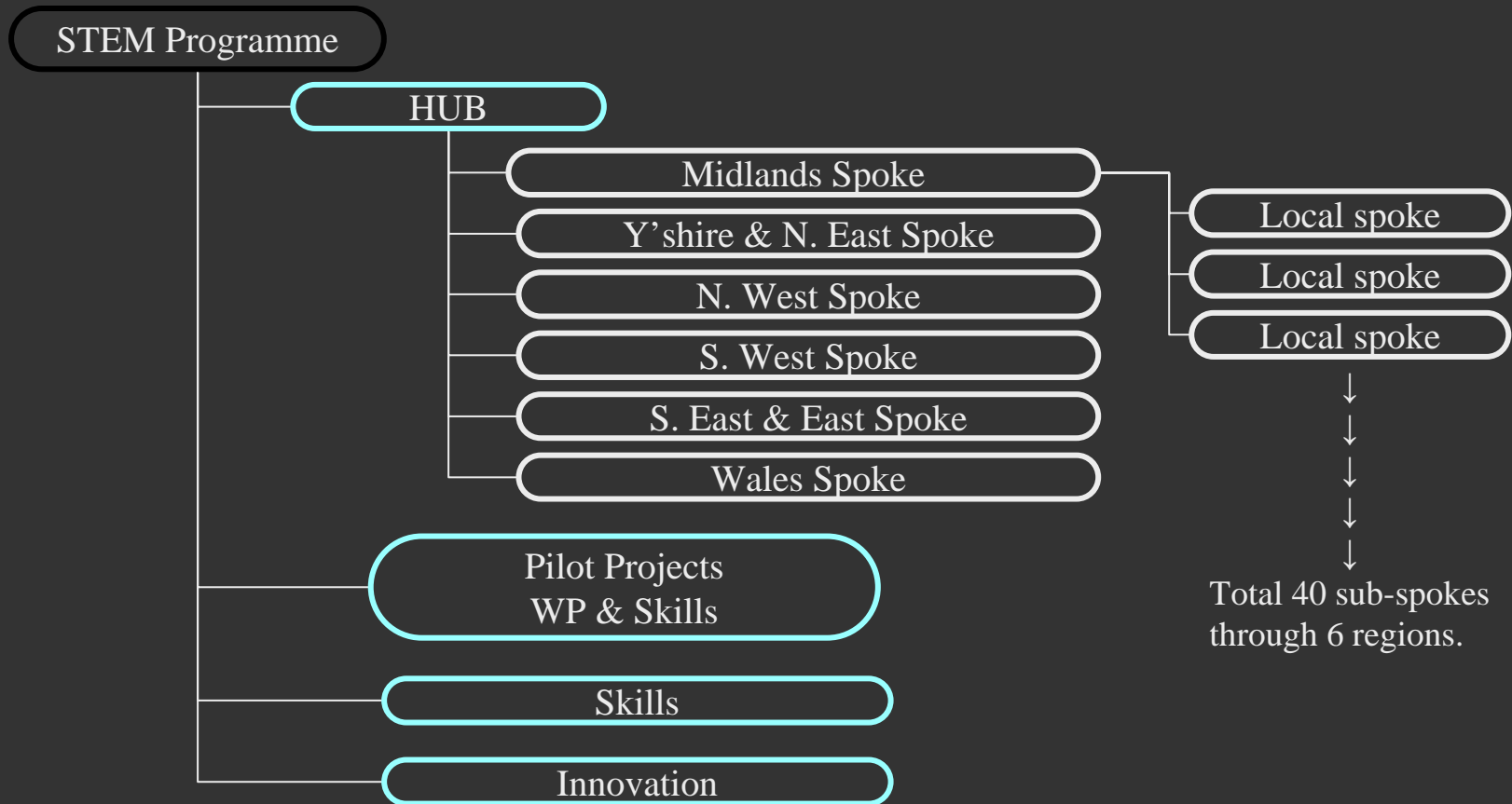
# Key Drivers

- The National HE STEM Programme must:
  - Build upon successes of existing pilot projects
  - Have a continued focus on widening participation
  - Address high level skills & employer engagement priorities
  - Add value and not duplicate the work of others
  - Prioritise & rationalise activity in schools & colleges so that it is HE specific and adds real value
  - Ensure long-term sustainability

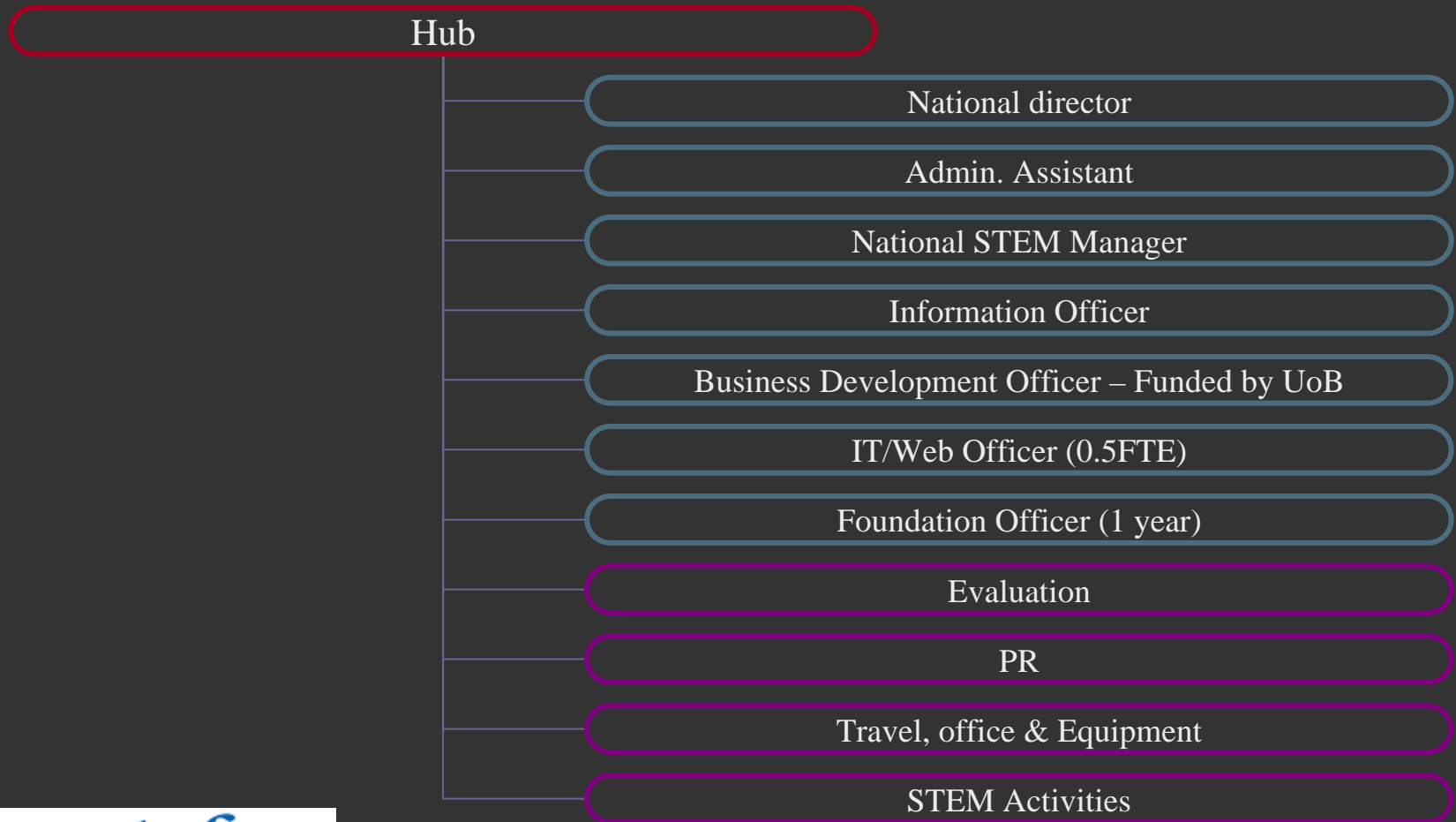
# National Initiatives & Organisations

- **Related national initiatives & organisations:**
  - **DCSF STEM Programme**
  - **Science Learning Centres**
  - **National Centre for Excellence in the Teaching of Mathematics (NCETM)**
- **HE Programme should not ‘duplicate work undertaken by others.’**
- **HE Programme activity within schools & colleges must be ‘HE-specific and bring real added value.’**

# National HE STEM Programme Structure



# Hub – Management Flow Chart





# Spoke – Management Flow Chart

Spoke

Regional director, 0.5FTE for 3 years

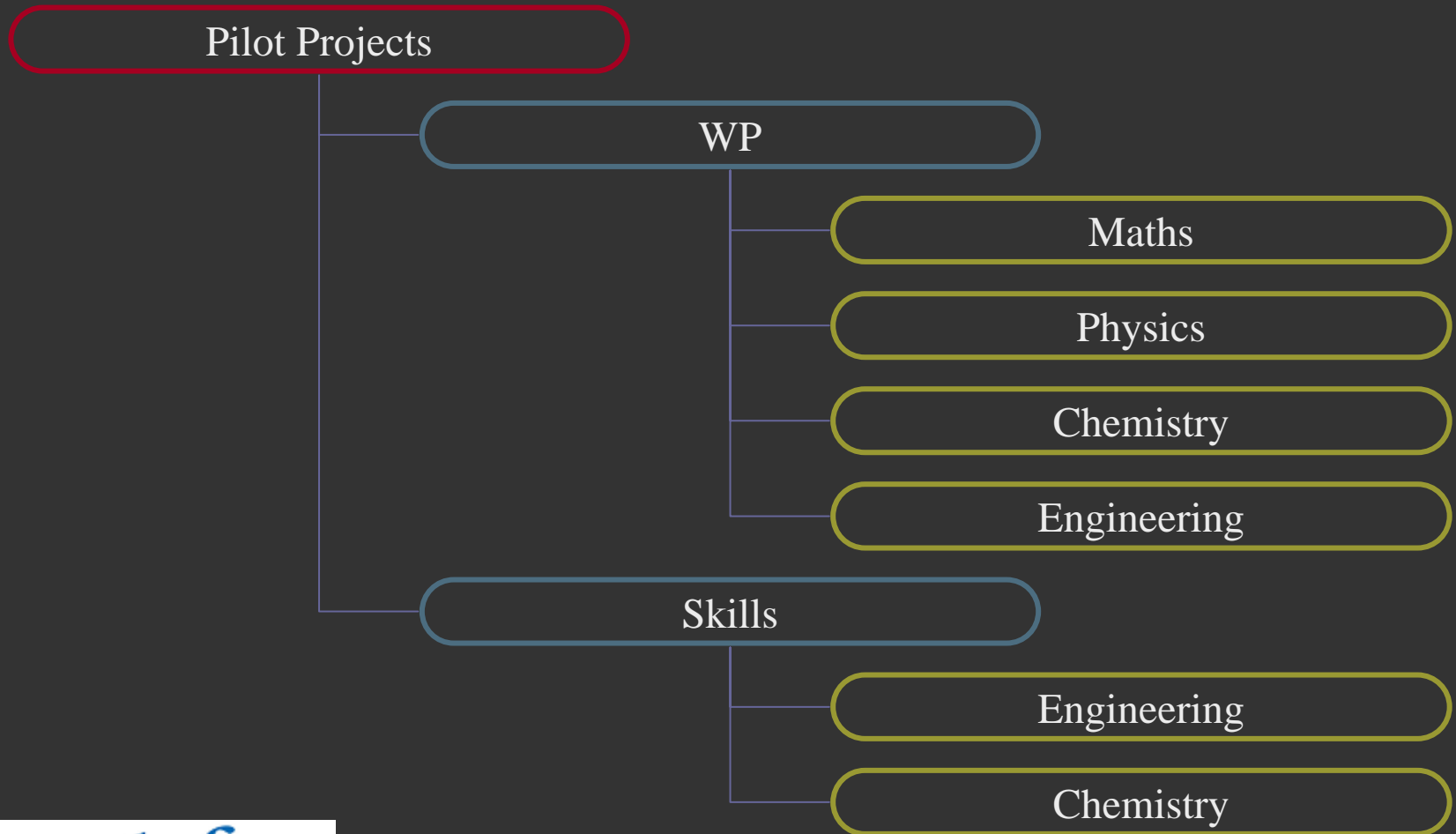
Development officer for skills

Regional Officer for outreach

SIG Support

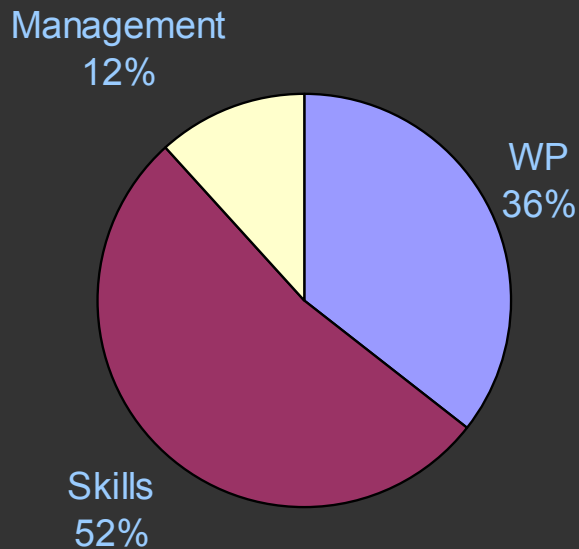
Travel & Subsistence

# Pilot Projects – Flow Chart

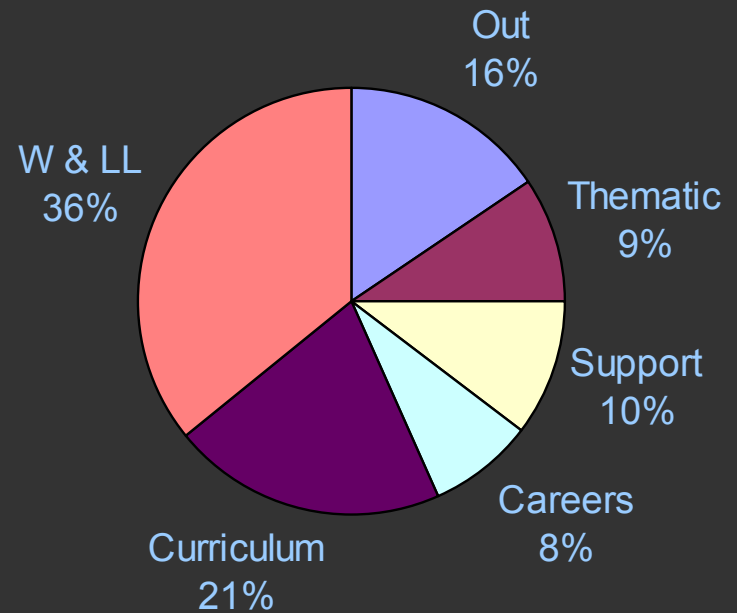


# Overall Distribution (Provisional)

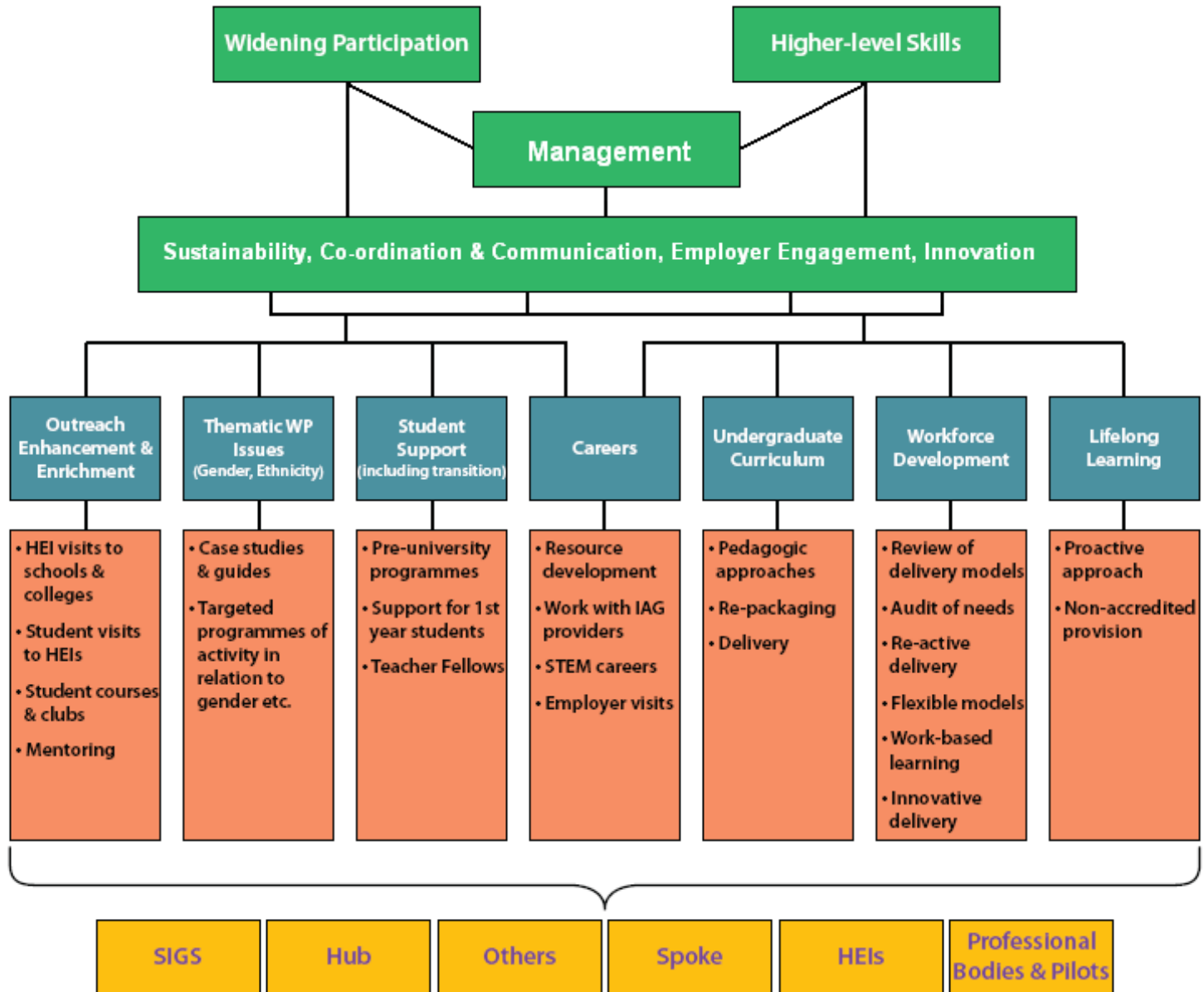
## Foci Resource Allocation



## Activity Resource Allocation

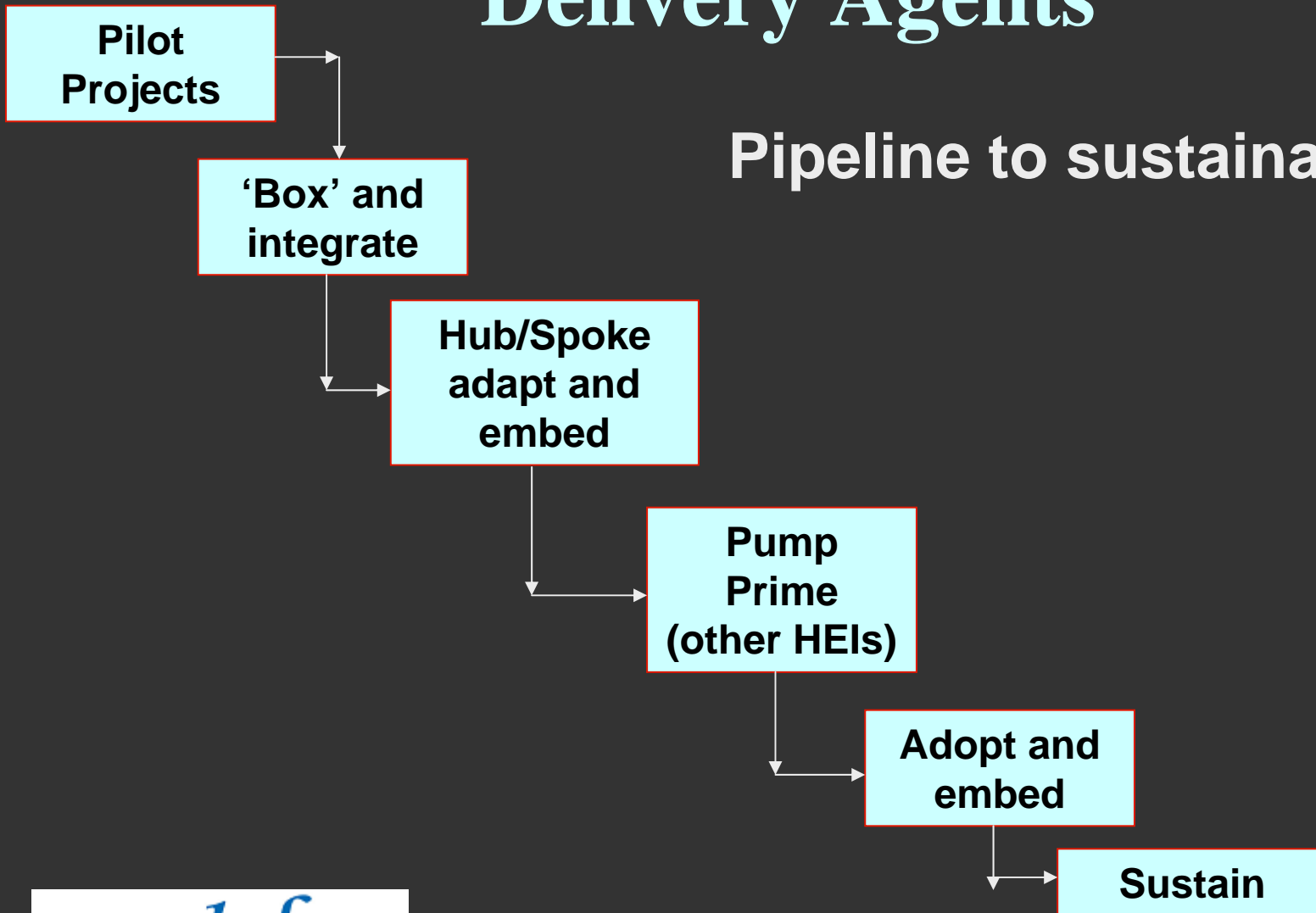


# Activity and Themes

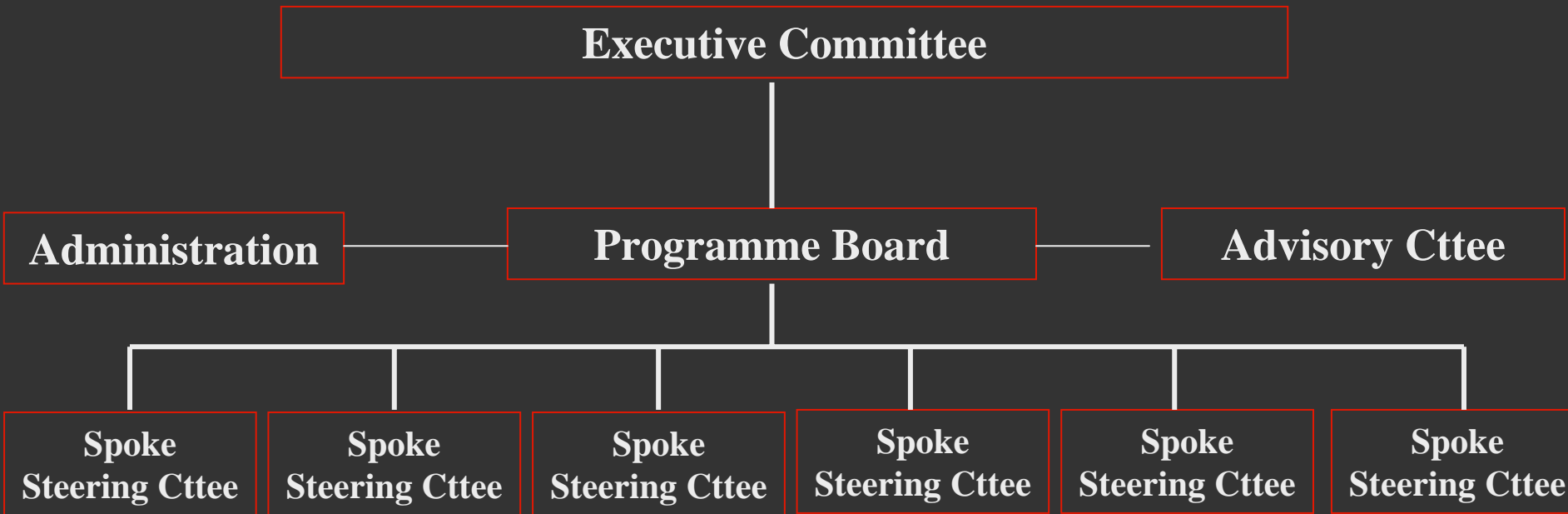


# Delivery Agents

## Pipeline to sustainability



# Governance and Management



# Summary

- **Await final confirmation from HEFCE**
- **Presently undertaking preparatory work**
- **National Programme to start 1<sup>st</sup> August 2009**