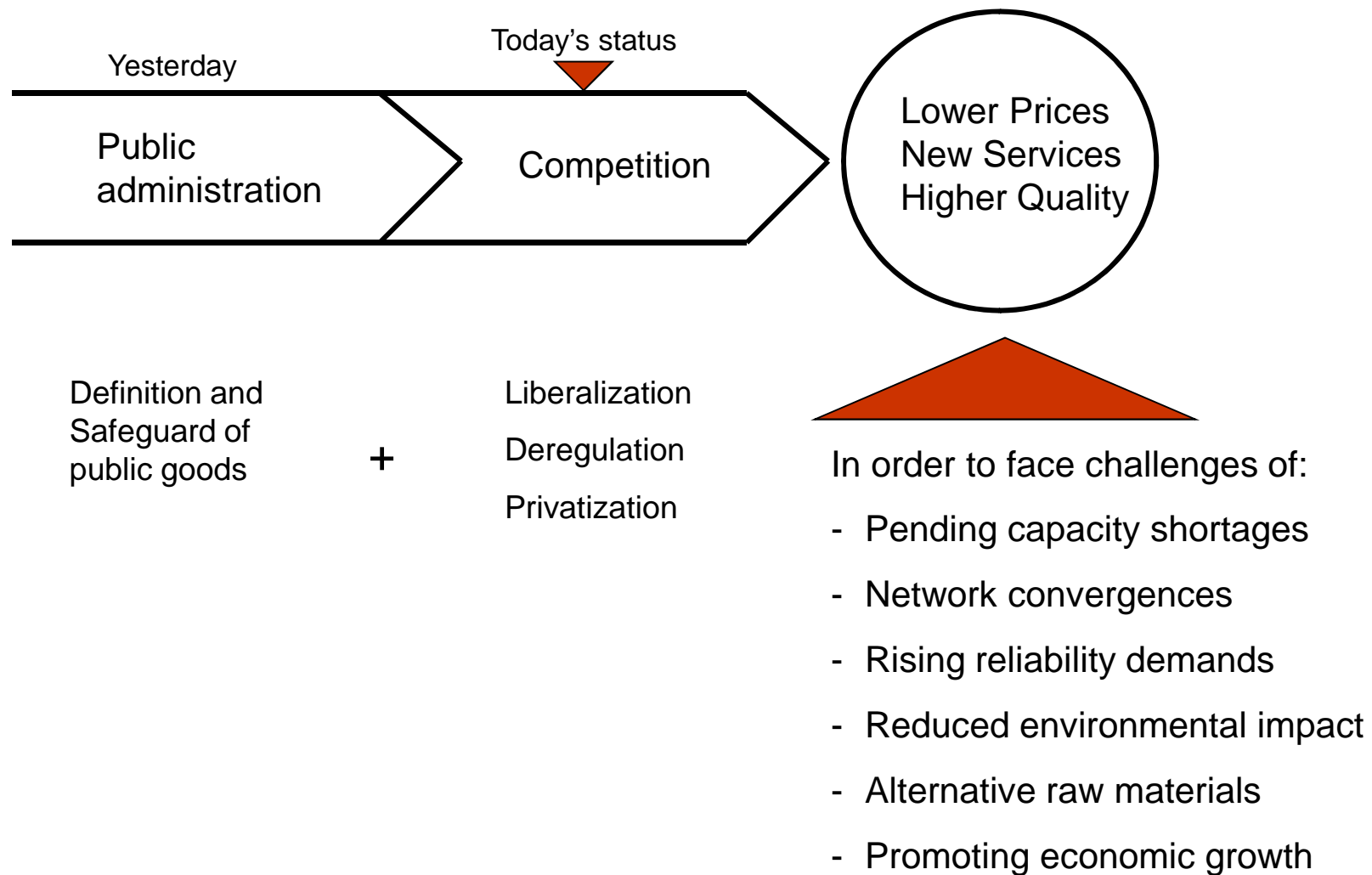


# European Energy Companies – Paths towards the Future

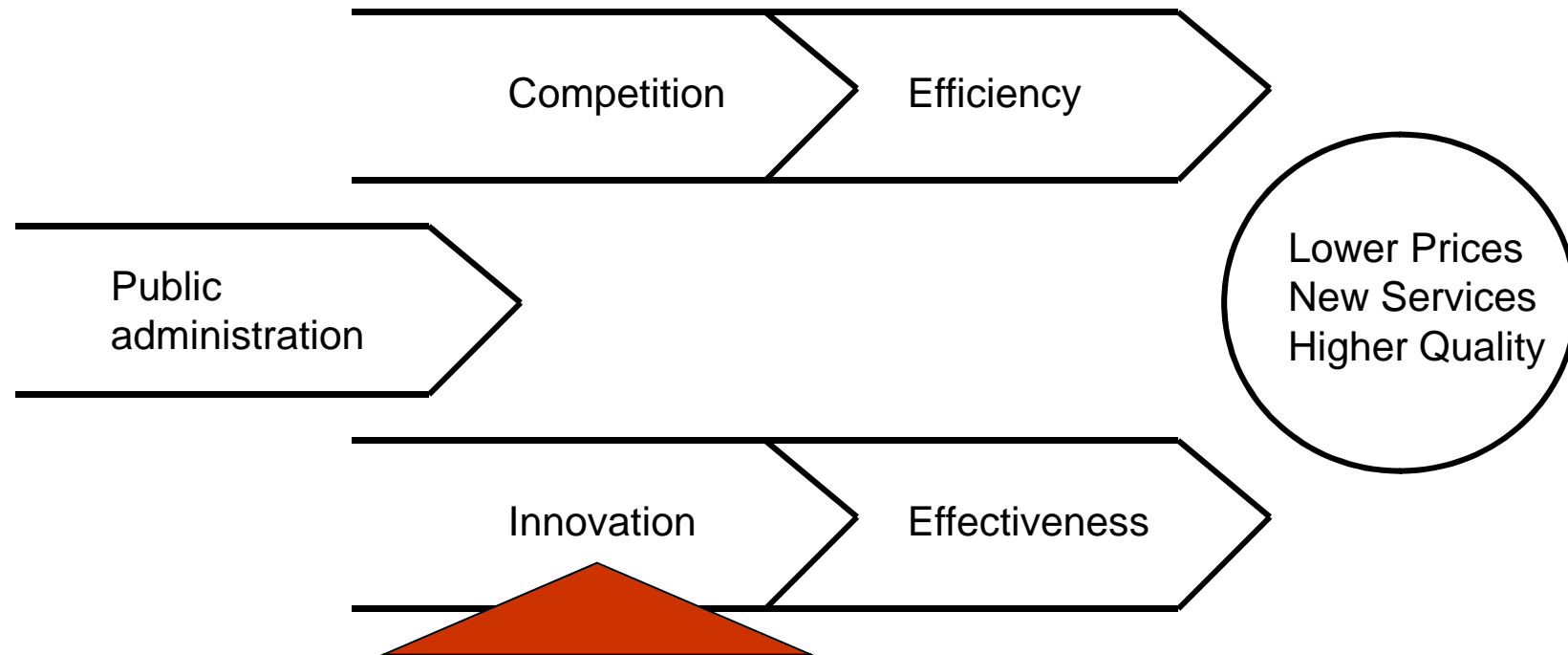
*The Hague, September 26<sup>th</sup> 2003*

- **The Challenge**
- **The Research**
- **Strategy Dynamics of the European Energy Industry**
- **Strategy Dynamics of Innovation**

## The introduction of competition was believed to achieve a better industrial structure for the customers



## Competition does not necessarily create innovation, and on its own does not meet the industry challenges



In network industries, requires:

- Network cooperation
- Deliberate long term orientation
- Attention to local demand

## The research analyzed strategic behaviour of 18 European energy companies

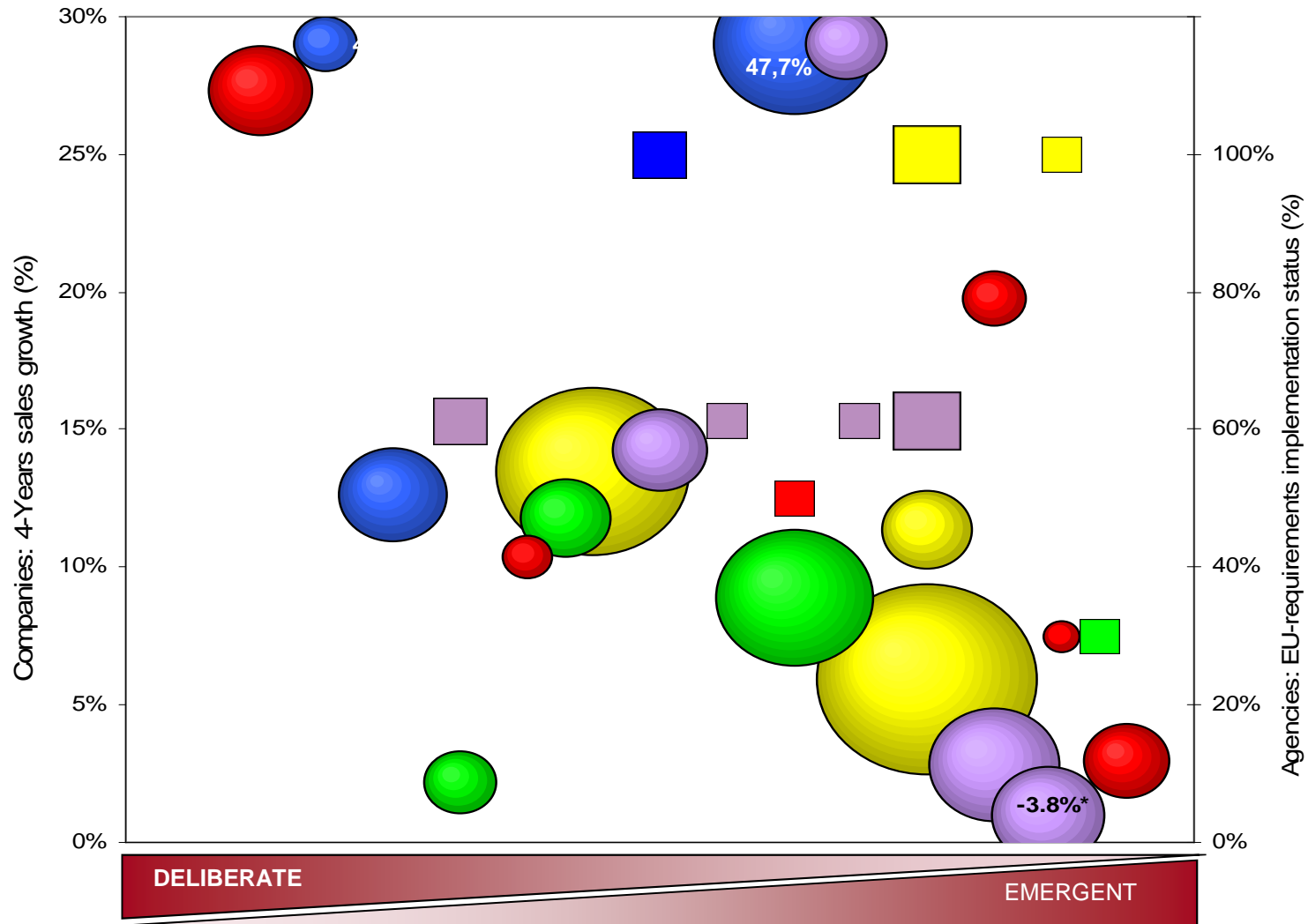


### Selection criteria:

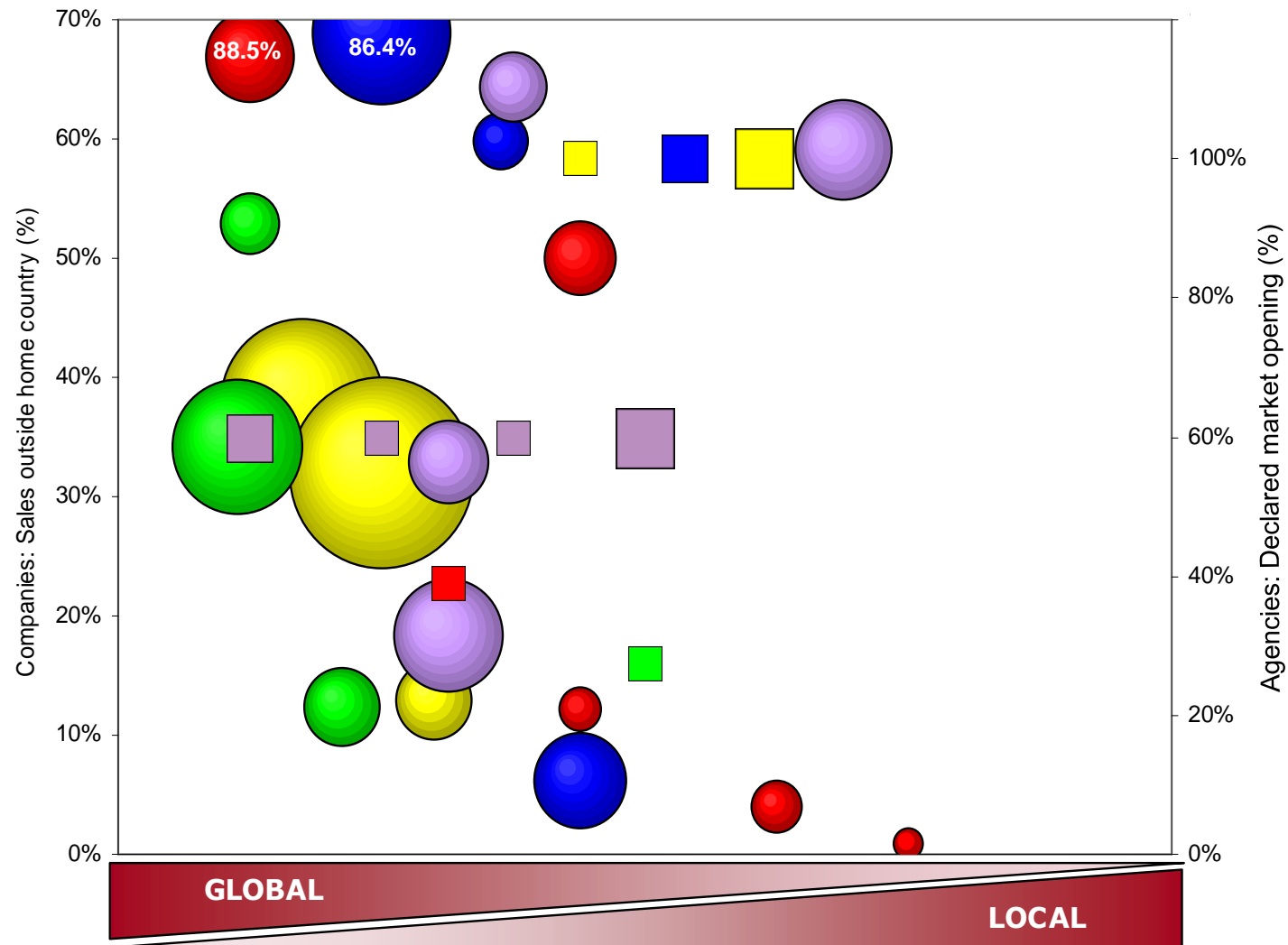
- significant volume
- not subsidiaries
- incumbant status with political influence
- respective national public agencies
- EU-institutions



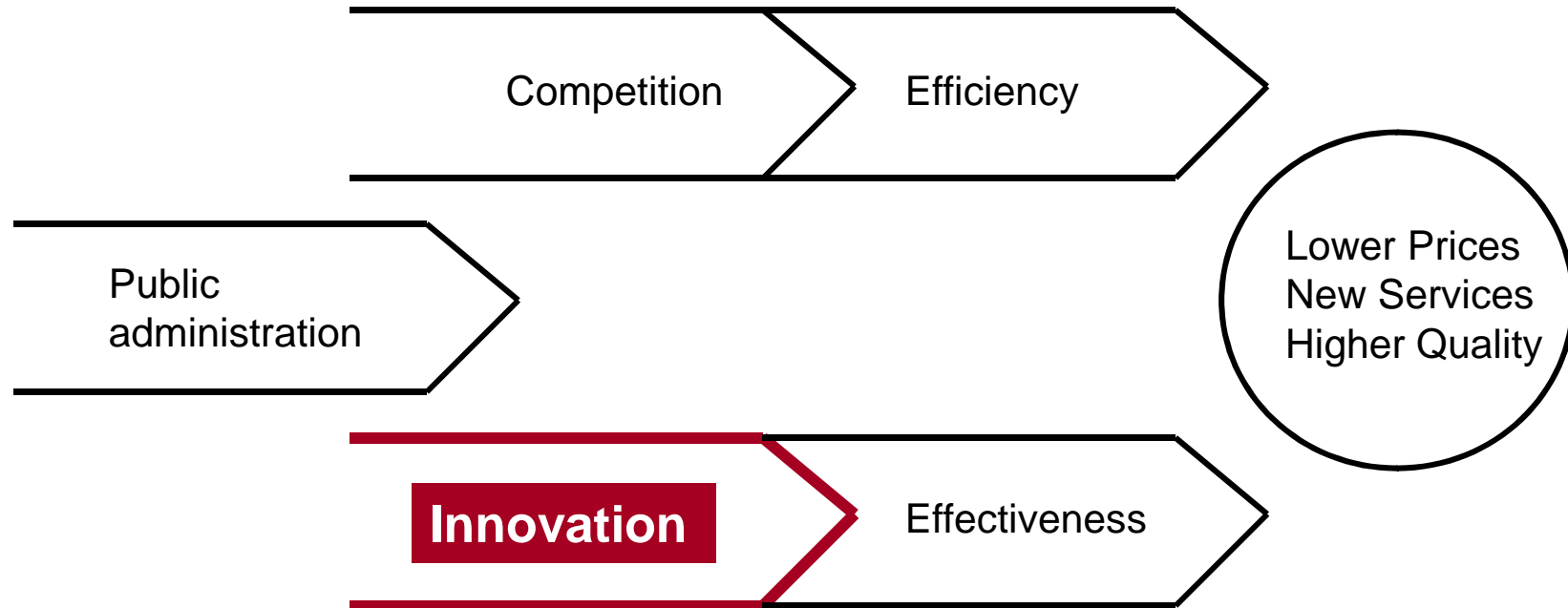
# Energy companies react to short term profit opportunities



## Energy companies search for economies of scale in size



# What are the dimensions of innovation?



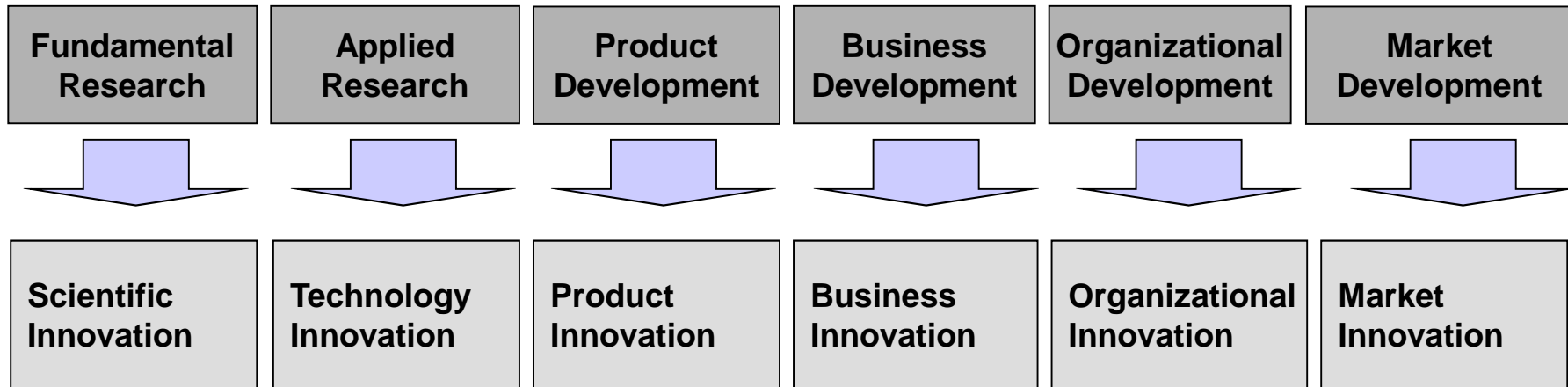


## Key Quote from OECD:

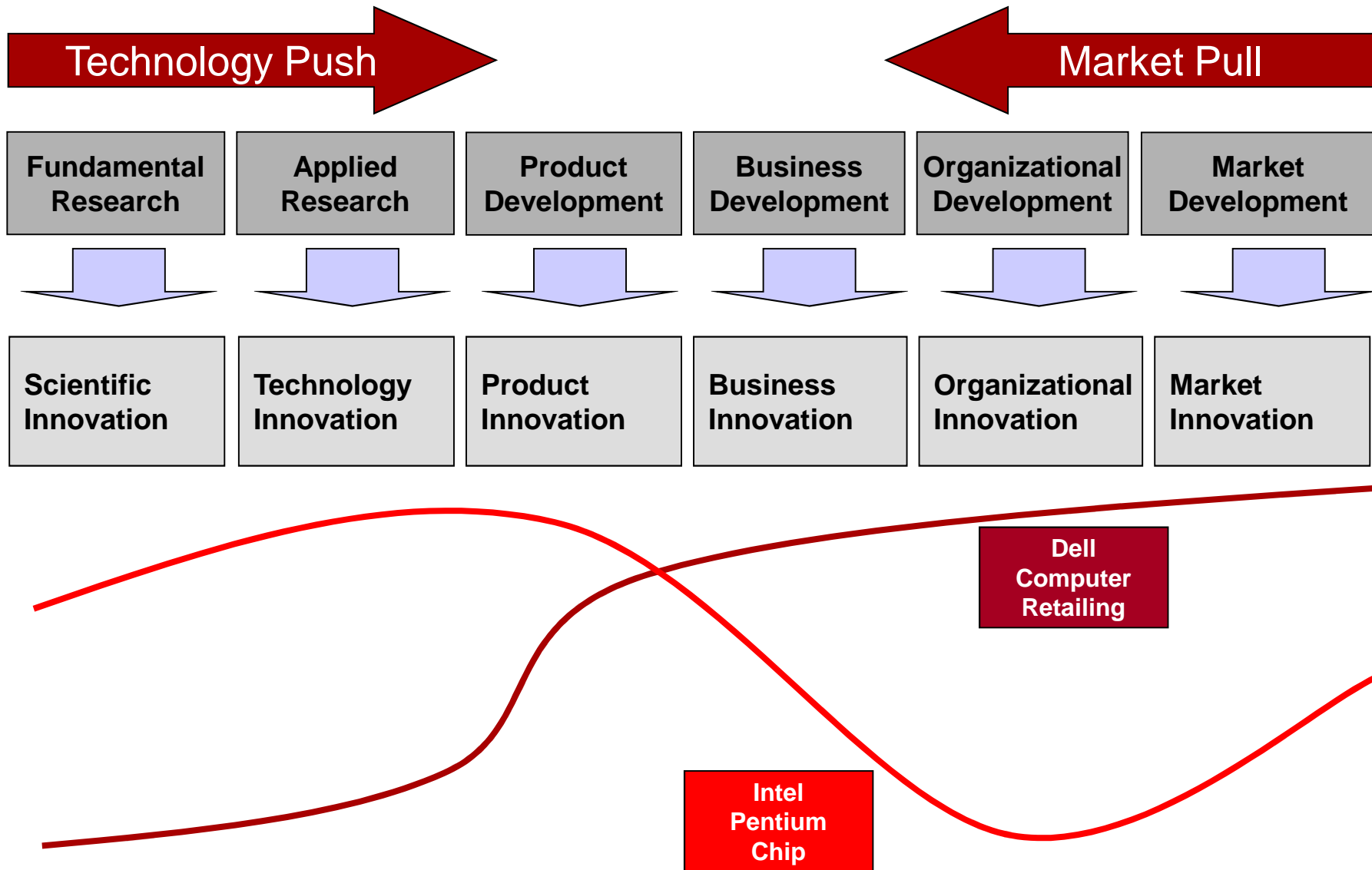
„Innovation can take many forms, ranging from radical innovations that create wholly new products, processes or services to incremental innovations that improve upon existing offerings in a more modest way. Although attention often focuses on the initial introduction of products, processes or services, incremental innovation and technology diffusion – which improves on initial innovations and spreads them throughout the economy – provide equally important economic benefits over the long term. The source of new ideas that drive innovation are also varied: it may stem from new science and technology or from new forms of organisation, new skills, new forms of marketing and ways in which demand manifests itself in the market place. Most successful innovation involves a combination of these factors.“

Source: OECD Science, Technology and Industry Outlook 2001

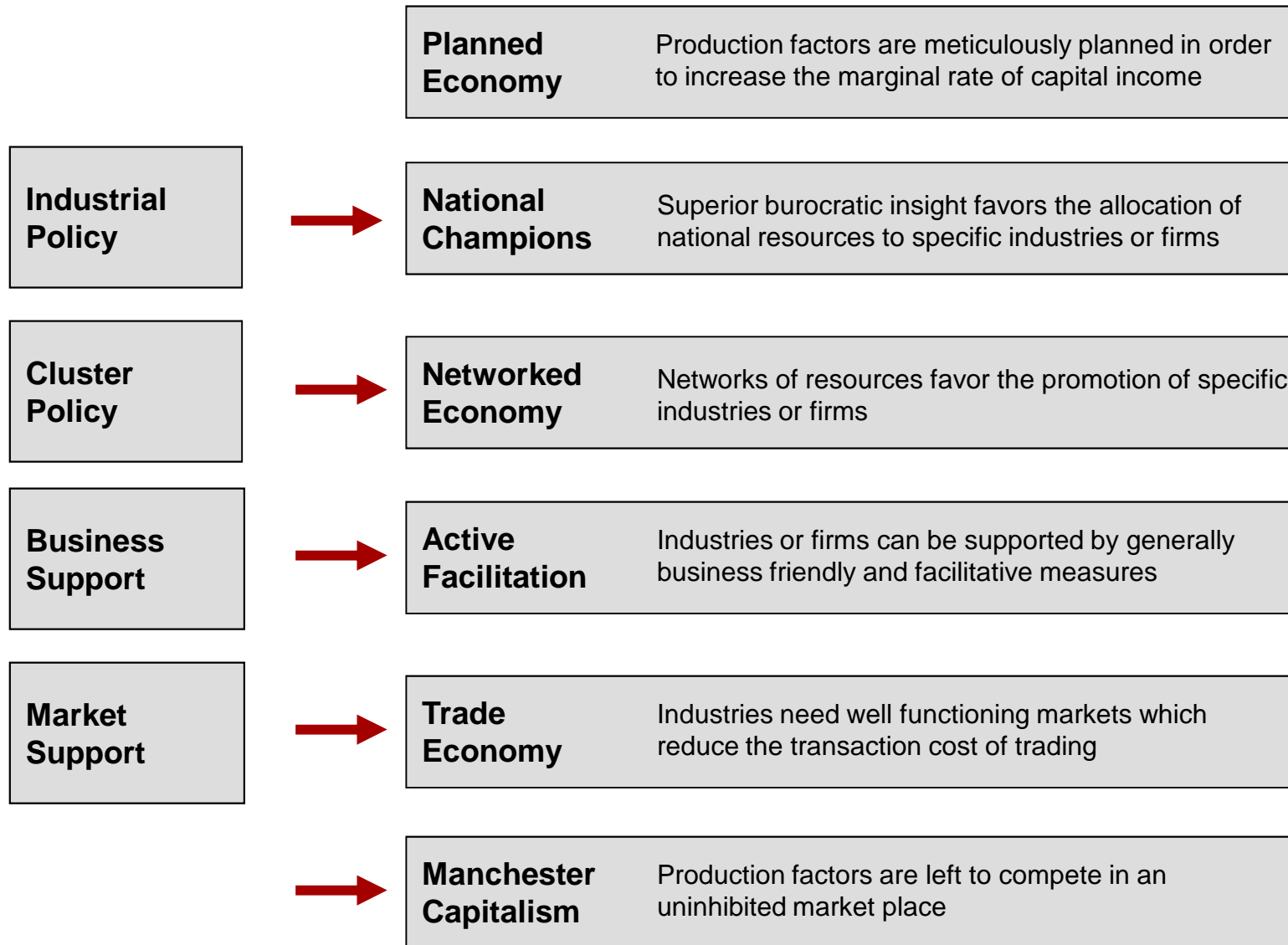
## Innovation occurs in many ways



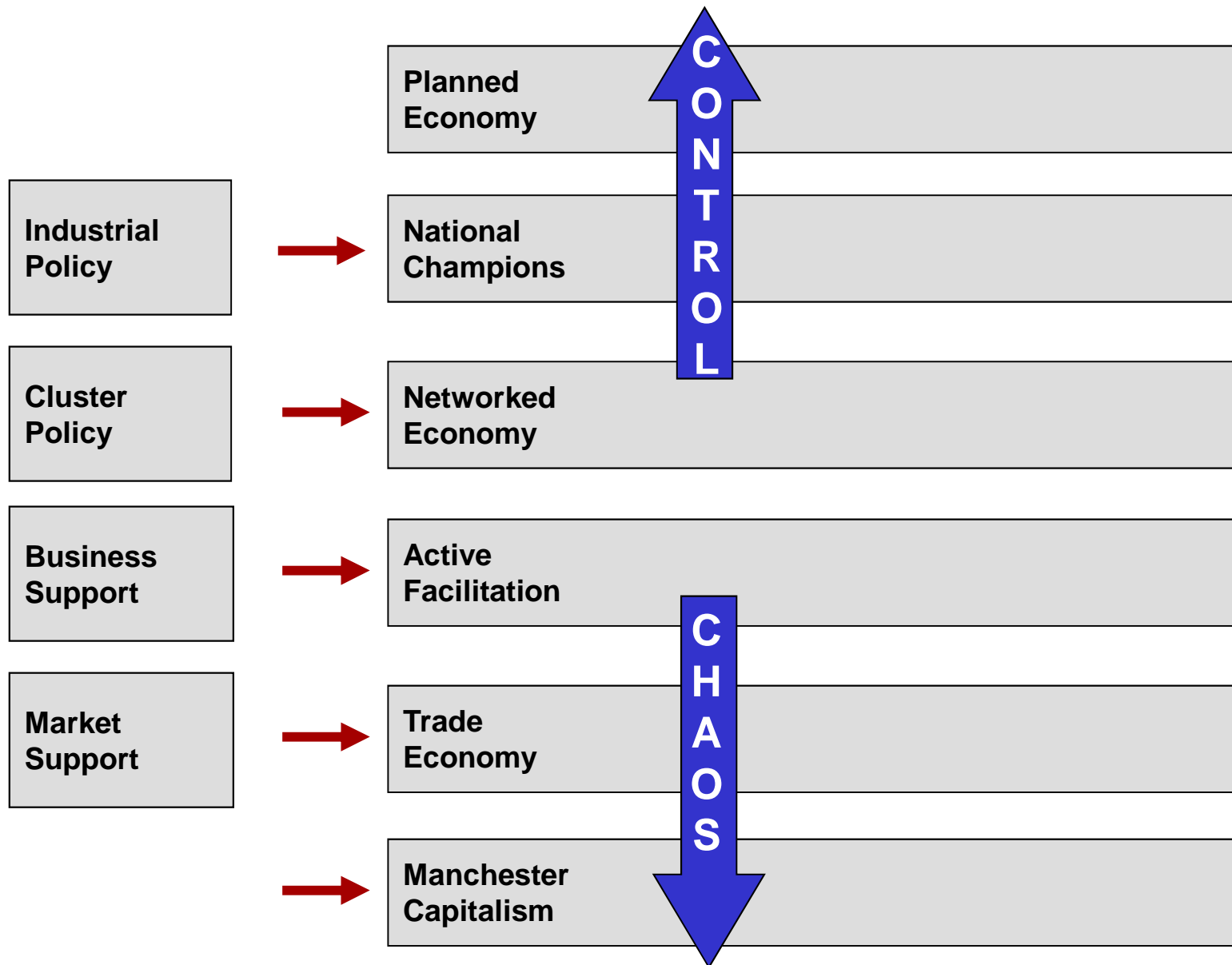
# Microeconomic choices for innovation



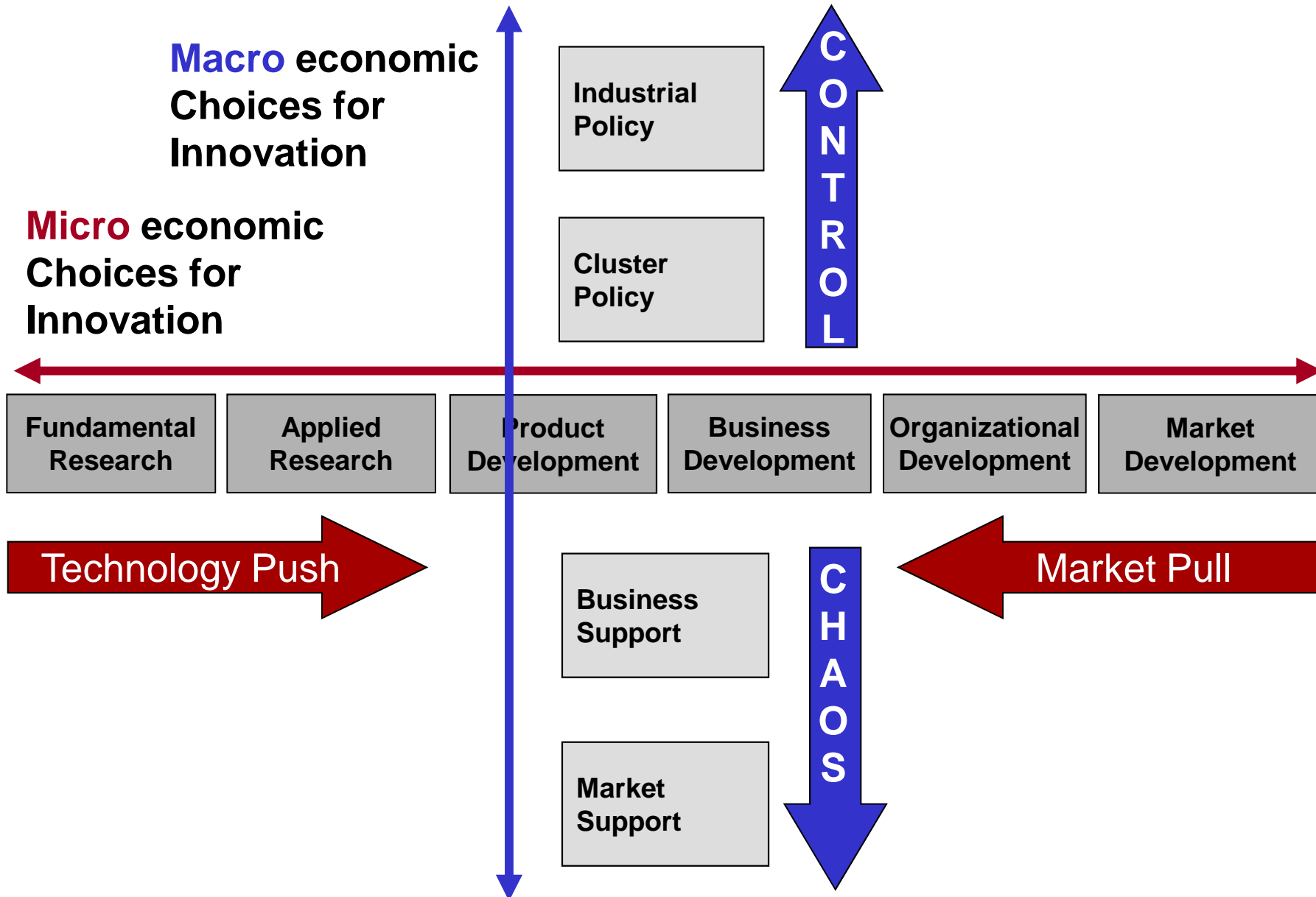
## Public policy occurs under various paradigms



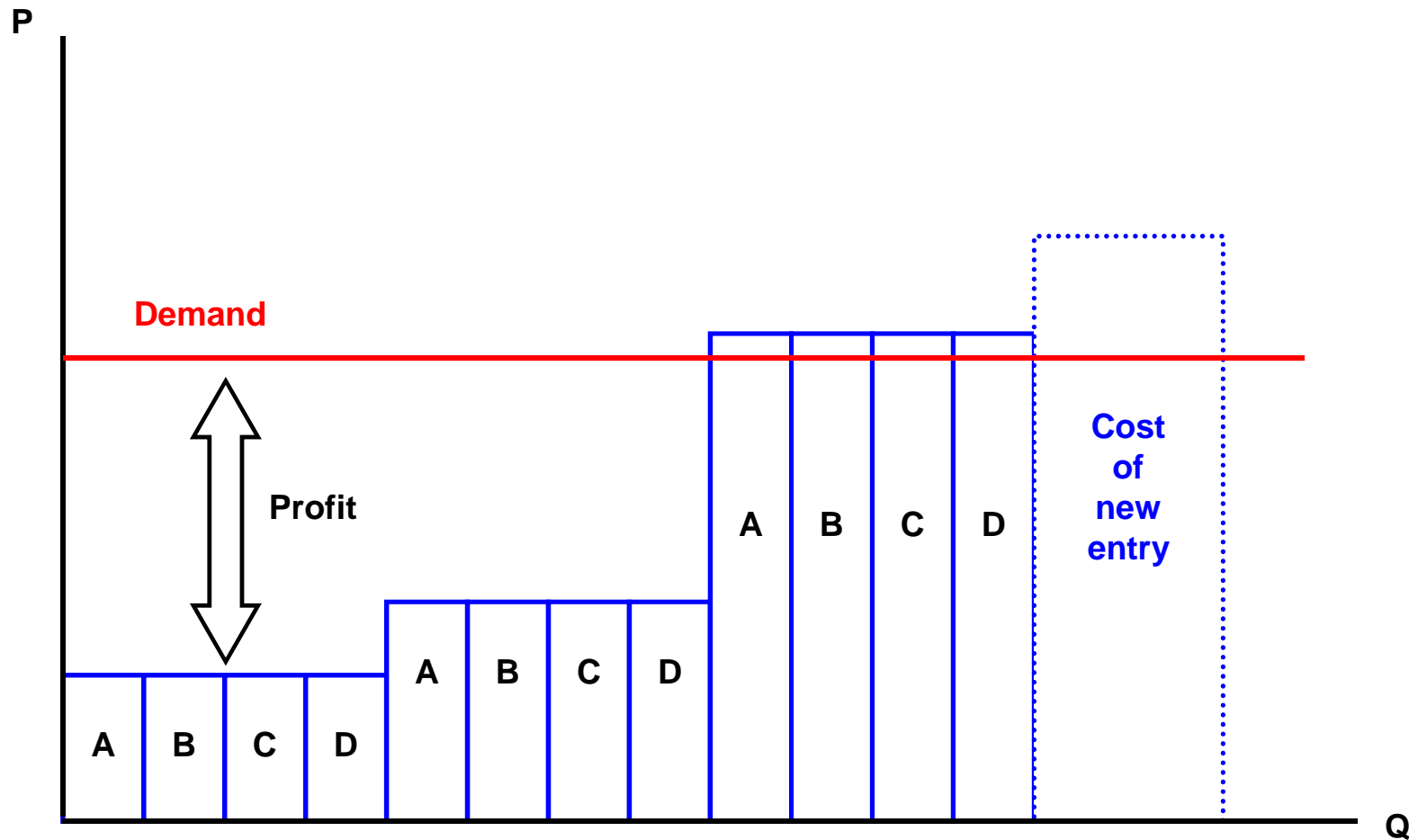
# Macroeconomic choices for Innovation



# Strategy Dynamics of Innovation



Even if four companies have perfect competition in the energy market, they would still earn very high profits and shut out new entry



# Large prevailing differences in national industrial structures prevent the emergence of a completely level playing field

## Germany

RWE	Ge+Ex	Tr+In	Tr+Sa
Germany	Orange, Pink, Blue, Green	Orange, Pink, Blue, Green	Orange, Pink, Blue, Green
Europe	Yellow, Pink, Blue, Green	Yellow, Pink, Blue, Green	Yellow, Pink, Blue, Green
World	Yellow, Pink, Cyan, Green	Yellow, Pink, Cyan, Green	Yellow, Pink, Cyan, Green

## France

EDF	Ge+Ex	Tr+In	Tr+Sa
France	Orange	Orange	Orange
Europe	Yellow	Yellow	Yellow
World	Yellow	Yellow	Yellow

## UK

Nat. Grid	Ge+Ex	Tr+In	Tr+Sa
UK		Orange, Green	
US	Yellow	Pink, Green	Yellow
World		Yellow, Green	

E.ON	Ge+Ex	Tr+In	Tr+Sa
Germany	Orange, Pink, Blue, Green	Orange, Pink, Blue, Green	Orange, Pink, Blue, Green
Europe	Yellow, Pink, Green	Yellow, Pink, Green	Yellow, Pink, Green
USA	Yellow	Yellow	Yellow

GDF	Ge+Ex	Tr+In	Tr+Sa
France	Green	Orange, Green	Orange, Green
Europe	Pink	Red, Pink, Green	Pink, Green
World		Pink, Green	Pink, Green

Centrica	Ge+Ex	Tr+In	Tr+Sa
UK	Yellow, Pink, Green		Orange, Brown, Cyan, Green
Belgium			Yellow, Pink, Green
US	Yellow	Yellow	Yellow, Green

	Minor Player
Electricity	Yellow
Gas	Pink
Water	Cyan
Engineering/Services	Light Green

	Large Player
Electricity	Yellow
Gas	Red
Water	Blue
Engineering/Services	Bright Green

	Dominant Player
Electricity	Orange
Gas	Brown
Water	Dark Blue
Engineering/Services	Dark Green

Ge + Ex = Generation and Exploration  
 Tr + In = Transmission and Infrastructure  
 Tr + Sa = Trading and Sales