



INNOVATION

Concept and relation with R&D

Brussels April 9, 2008

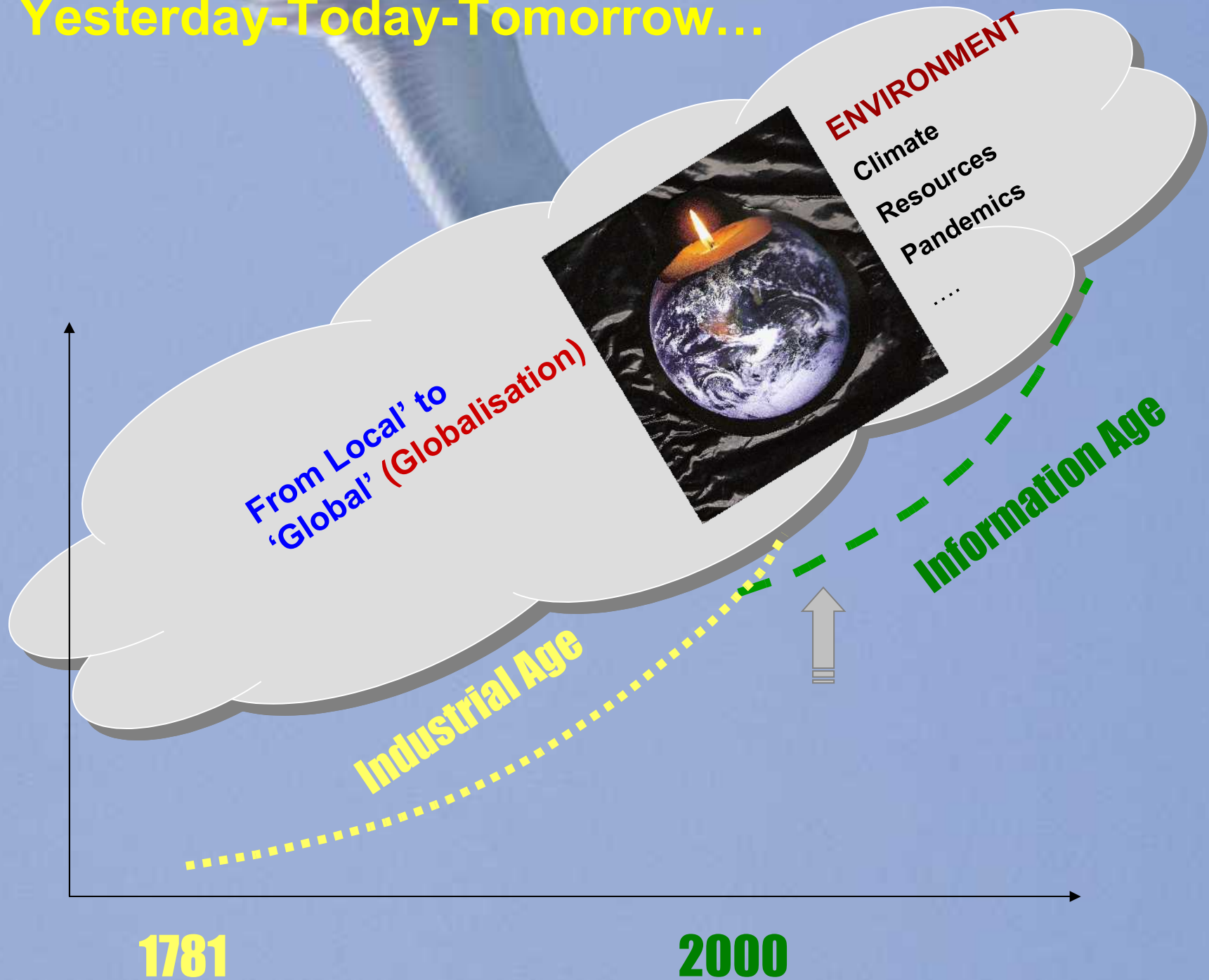
Dr S. Konidaris

Spyros.konidaris@skynet.be
Spyros.konidaris@talktalk.net

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- **INNOVATION as a triptych
(Education- R&D- Ideas)**
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'Central Power'**
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Yesterday-Today-Tomorrow...





Definition of 'INNOVATION'

The introduction of something new...

in

economics, business, technology, sociology, engineering, politics,...

PS

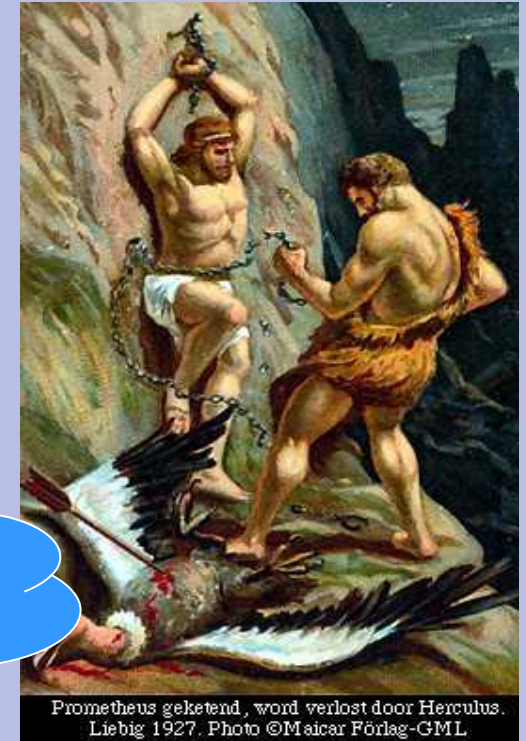
*..and hopefully **beneficial***

The PROMETHEUS allegory

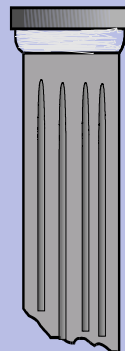
PROMETHEUS

Deus ex machina...

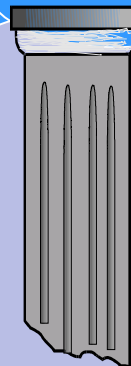
(απο μηχανής Θεός..)



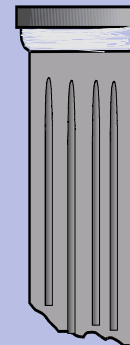
Education/Training



R&D



'Ideas'



A 'New Era'

Is characterised by discontinuity with the past and requires **new** models

- New 'concepts' (ie sustainability,...)
- New social and political models
- New economic models
- New Infrastructures (Networks and IT tools...)
- New.....
- ..

Challenges...

....a new *Odyssey*



And NEW means INNOVATION!!

Innovation by whom and for whom

Innovation

From ALL and for ALL!!!

(citizens, consumers, researchers,
young, old,,...)

Society of Innovation



An additional pre-condition:

The **'environment'**

- Education/Training
- R&D
- Ideas



Necessary

but not

Sufficient

Conditions for
Innovation

The **'environment'** will determine 'fruition'

Conditions for 'fruition' of Innovation



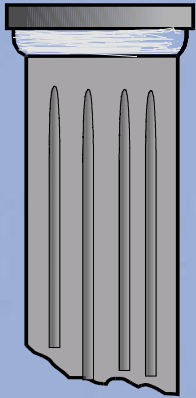
**Fertile
conditions**
(Athens 5th
century,
Renaissance,..)



**Infertile
conditions**
(Medieval,..religious
oppression,)



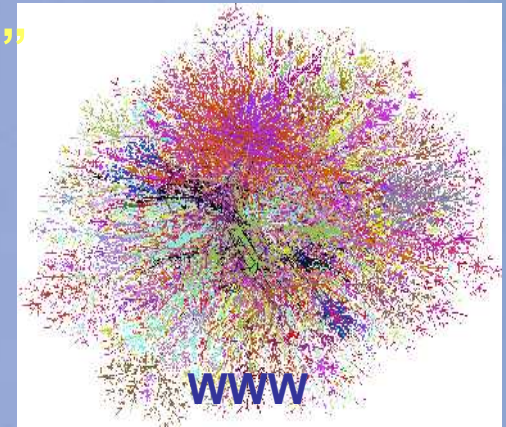
Education/Training and Innovation



“Amassing experiences and knowledge”

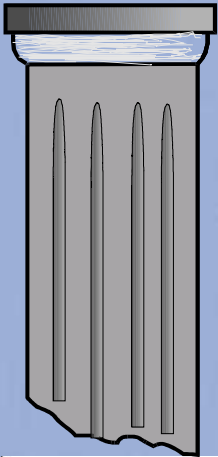
..in its broadest sense.

Learning, skills, training, judgment, memories, behaviours,...knowledge,.....wisdom /ΣΟΦΙΑ



R&D (Research and/or Development) and Innovation

Introductory comments



- (Re) search:

a natural feature of 'homo sapiens' (curiosity, new frontiers,...)

Dilemma: 'Short-term' versus 'long-term'

- R&D Results:

(Immediately) exploitable, 'Not-exploitable',

(the courage to defend both...)

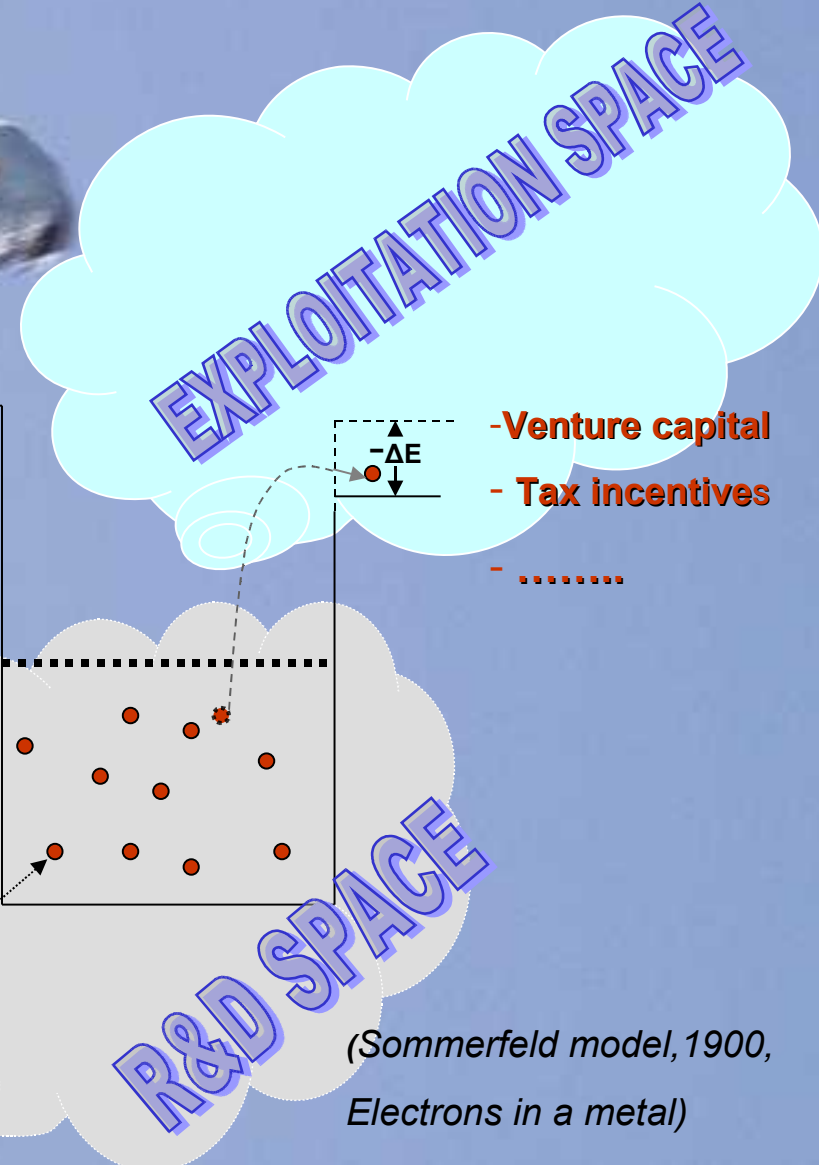
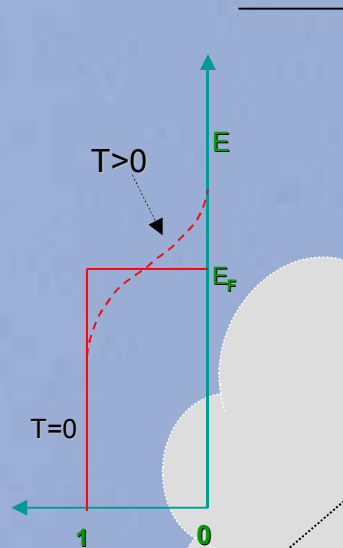
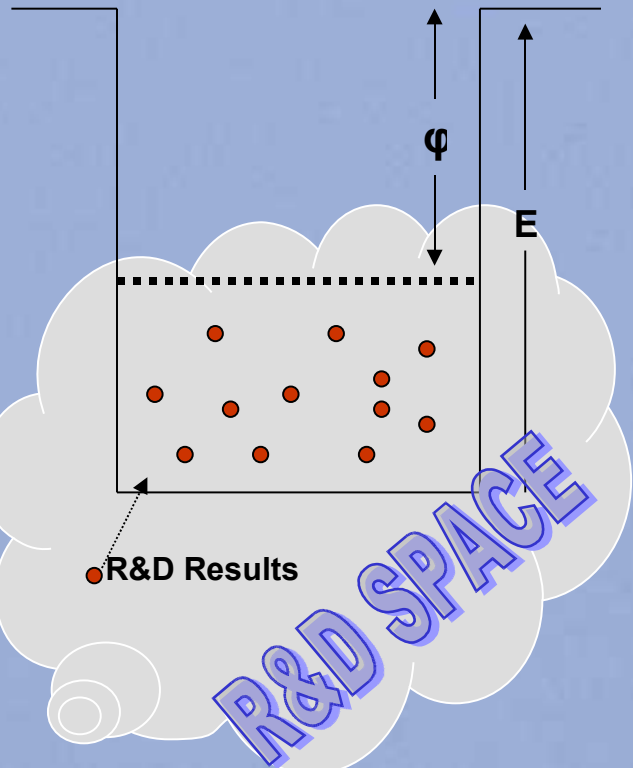
- Co-operative R&D:

very attractive, not always cost-effective and should not suppress 'non-main-stream' R&D

R&D and 'exploitability'

(Publicly-funded R&D Model)

- N : Number of R&D results
- E : Energy
- ϕ : Potential barrier
- $-\Delta E$: Reduction of Potential Barrier

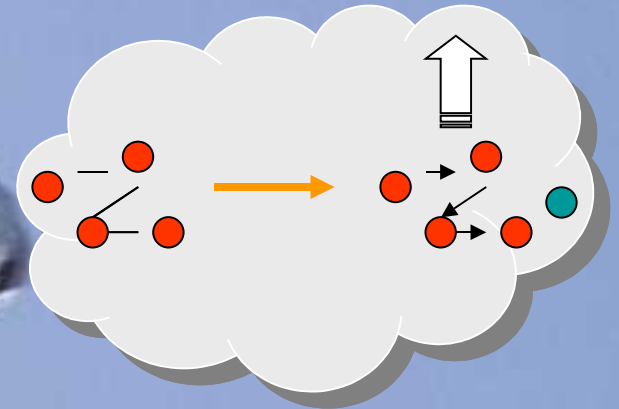


(Sommerfeld model, 1900,
Electrons in a metal)

Complementary mechanisms for 'exploitability'

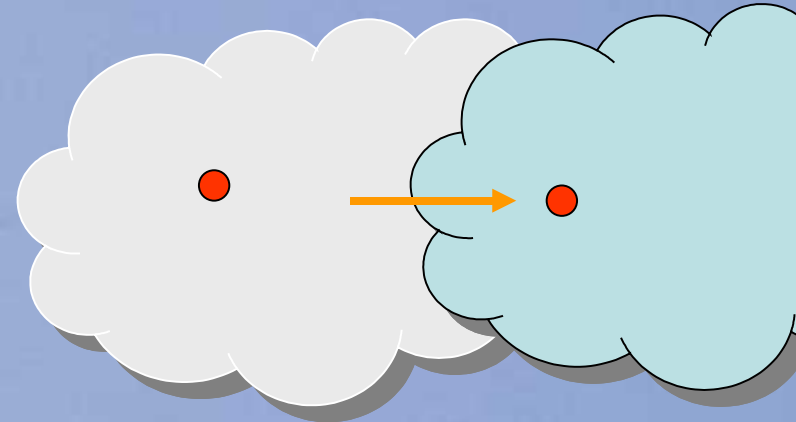
- 'Internal exploitation':

Within the R&D Space, through mutual interaction of results there is a multiplier effect. (The intangible benefits of R&D Programmes against individual Projects)



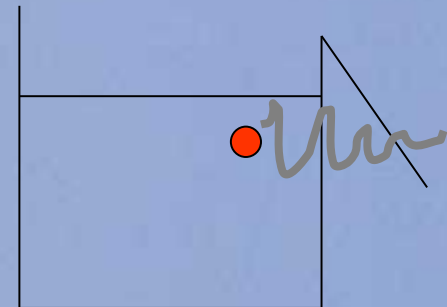
- 'Collapse of 'Potential Barrier':

Merge of 'R&D Space' with 'Exploitation Space' (ie University – Industry Joint Projects, spin-offs, etc)

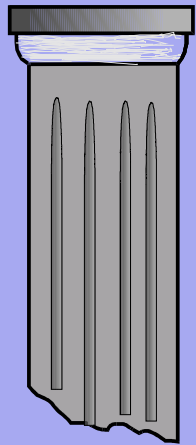


- 'Tunneling effects':

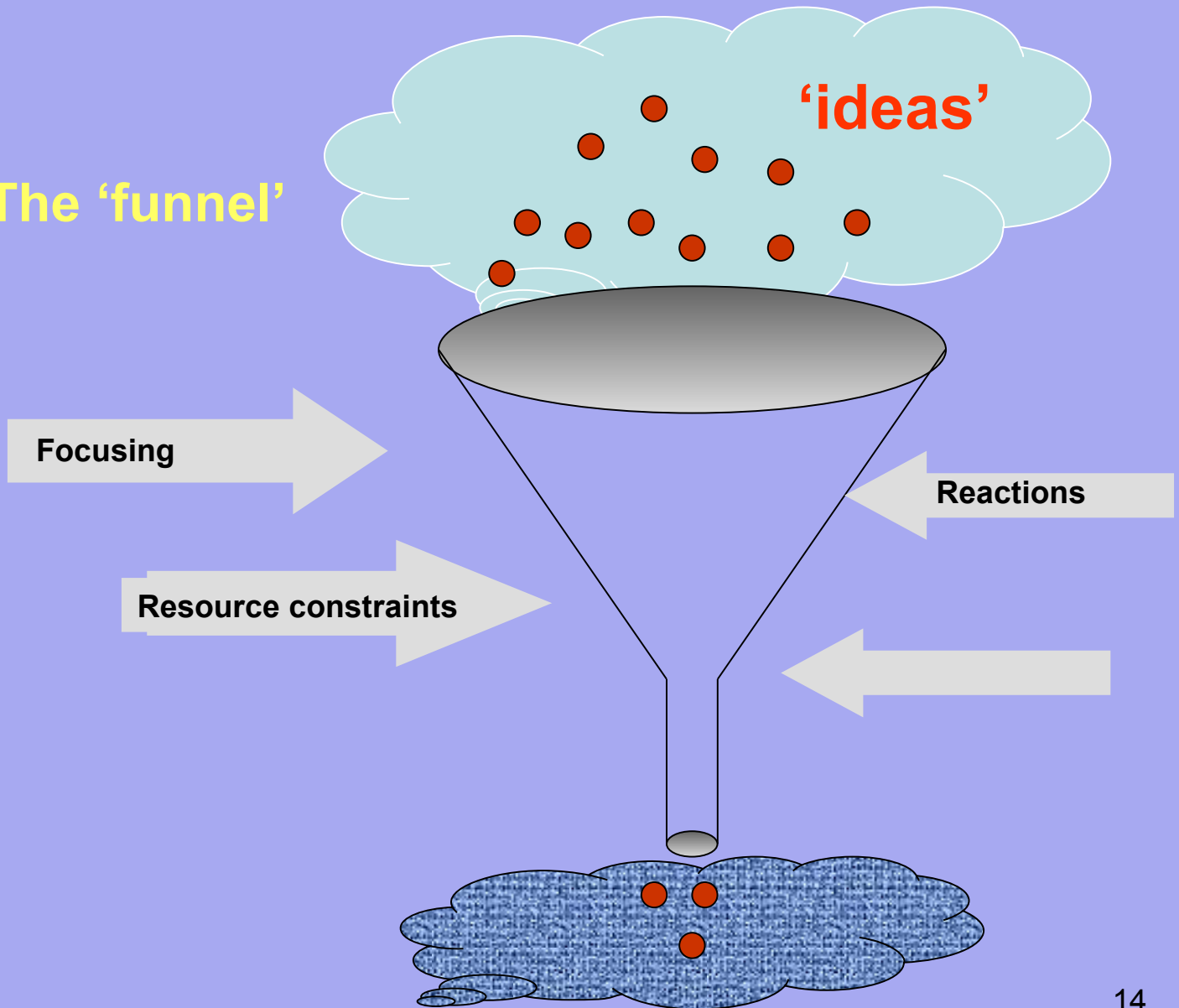
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'Ideas' and Innovation



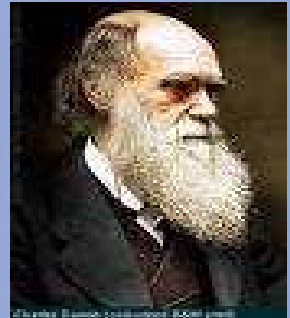
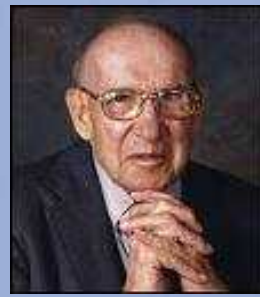
The 'funnel'



Everyone in his/her role (1)

Potential Source of Innovation

The individual



Everyone in his role (2)

The Group

Business, SME,
organisation,..

Required:

- Target definition
- Creative participation
- Communication and access to Information
- Management (Leader, communication, empowerment, ...)

and

Fruitful 'environment'



**Potential
Source of
Innovation**

Everyone in his role (3)

The 'central power'

State (national/ local
Government,...)

Super-national (Commission,
Council, EP)

➤ **defines/influences**

- Education

- R&D

- Legal frameworks

- Conditions of Competition

- 'environment'

- ..

➤ **encourages-supports-
rewards**



✓ Reorganization of National Admin

✓ Education Reform

(Creativity!!!!!!, ..)

✓ Telecoms/Infrastructures

regulatory framework

Networks(ADSL,Fiber,..)

Computer proliferation

...

✓ Energy Infrastructures

New methods

✓ Tax incentives

✓ Cultivate 'venturing'

✓ Patents laws

✓ Innovation awards

✓ Venture capital

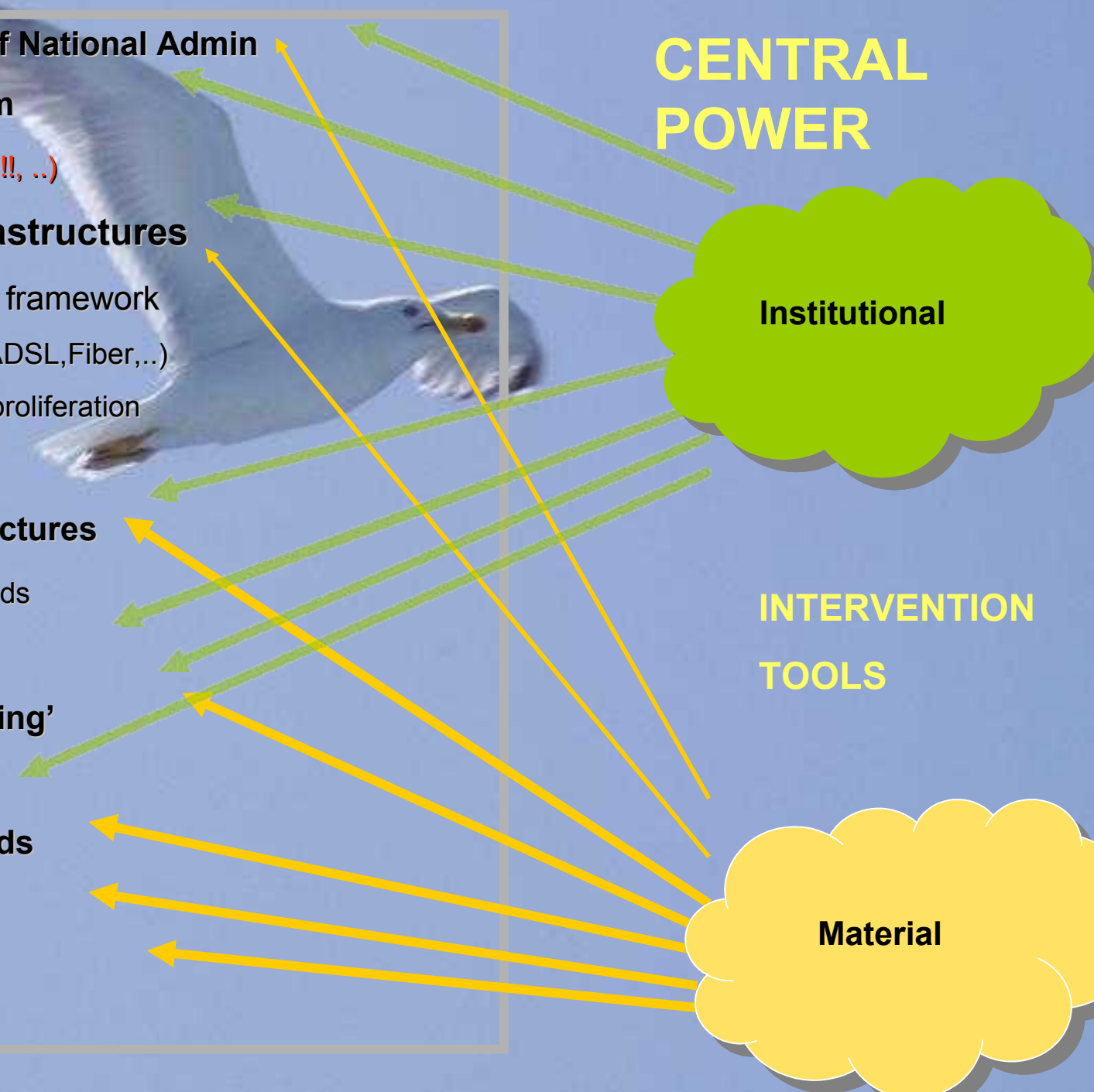
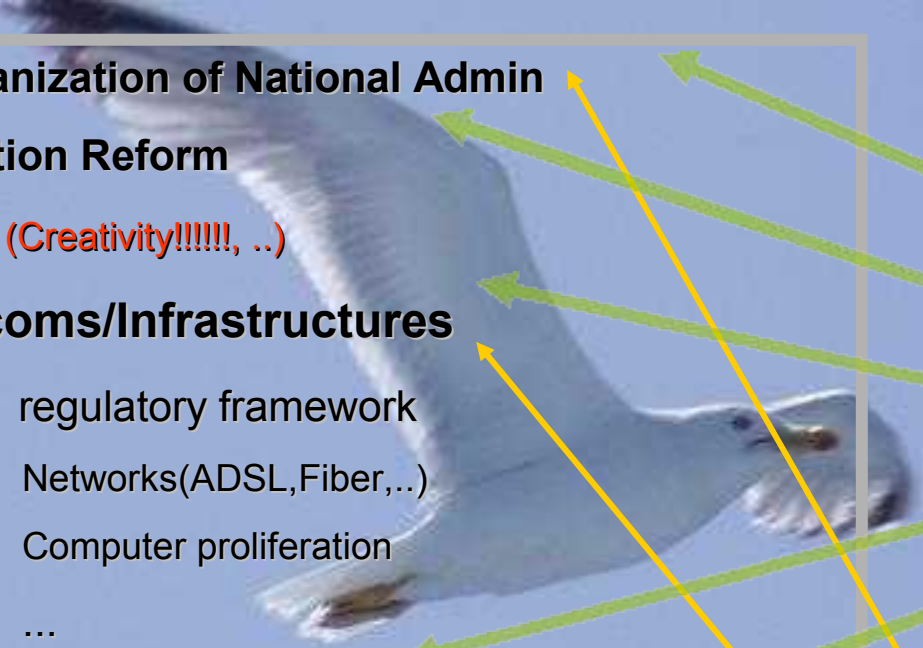
✓

**CENTRAL
POWER**

Institutional

**INTERVENTION
TOOLS**

Material



Conclusions

Do not search for **INNOVATION**
per se

Look for what leads to
INNOVATION:

Education – R&D – ‘Ideas’
‘Environment’

Use wings

but

beware...



Prometheus



Ikaros



Thank you

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