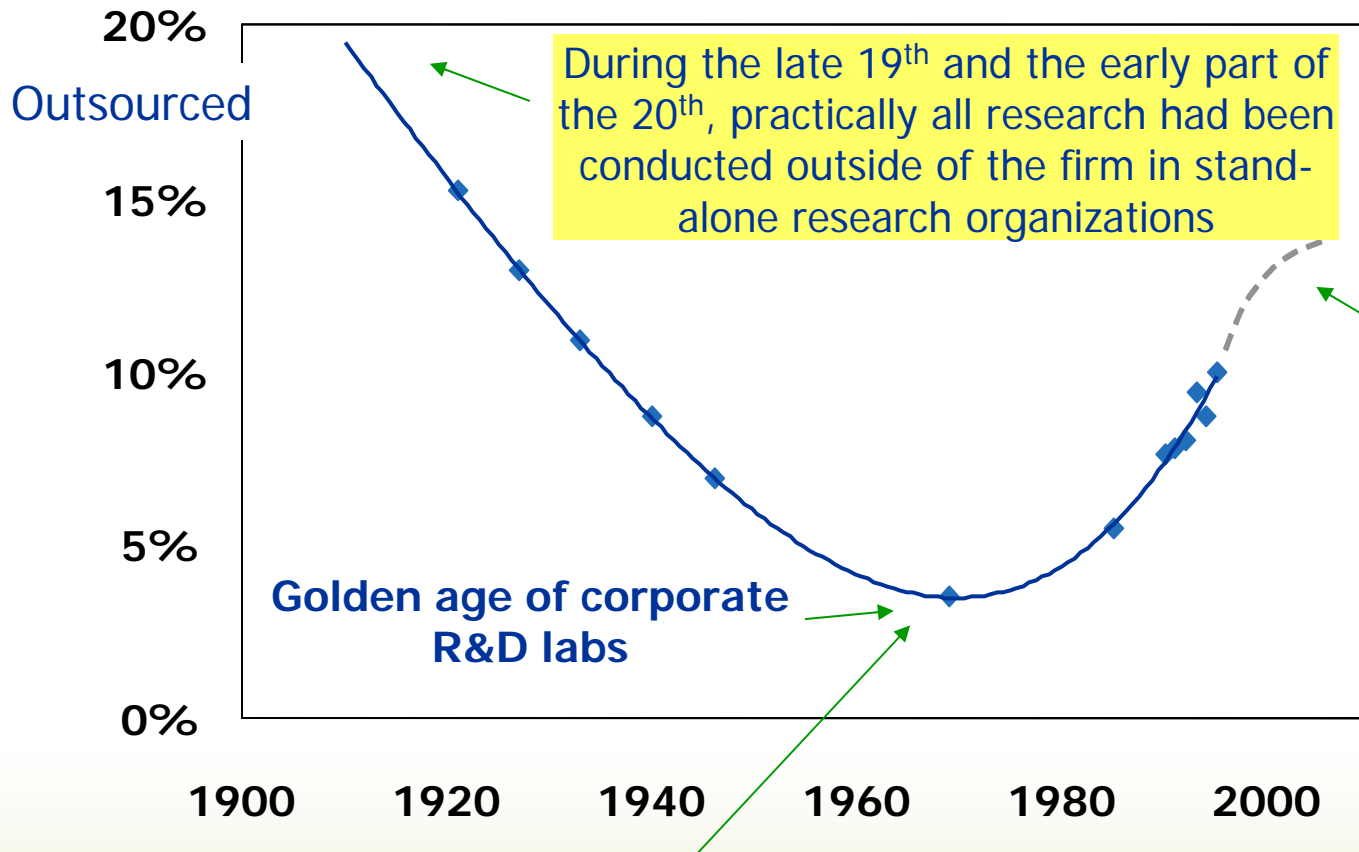




Responsible Partnering and Building Effective Innovation Ecosystems

Andrew Dearing
RedOTRI Annual Conference
12th June 2008

Trends in R&D Outsourcing...



Changing role of innovation networks as source of know-how

Balance between outsourced R&D and in-house capacity
Appraise, select and use "brought in" research and technical elements

Now on a global scale

"Roughly 3% of research is bought outside the firm – 1969 EIRMA study

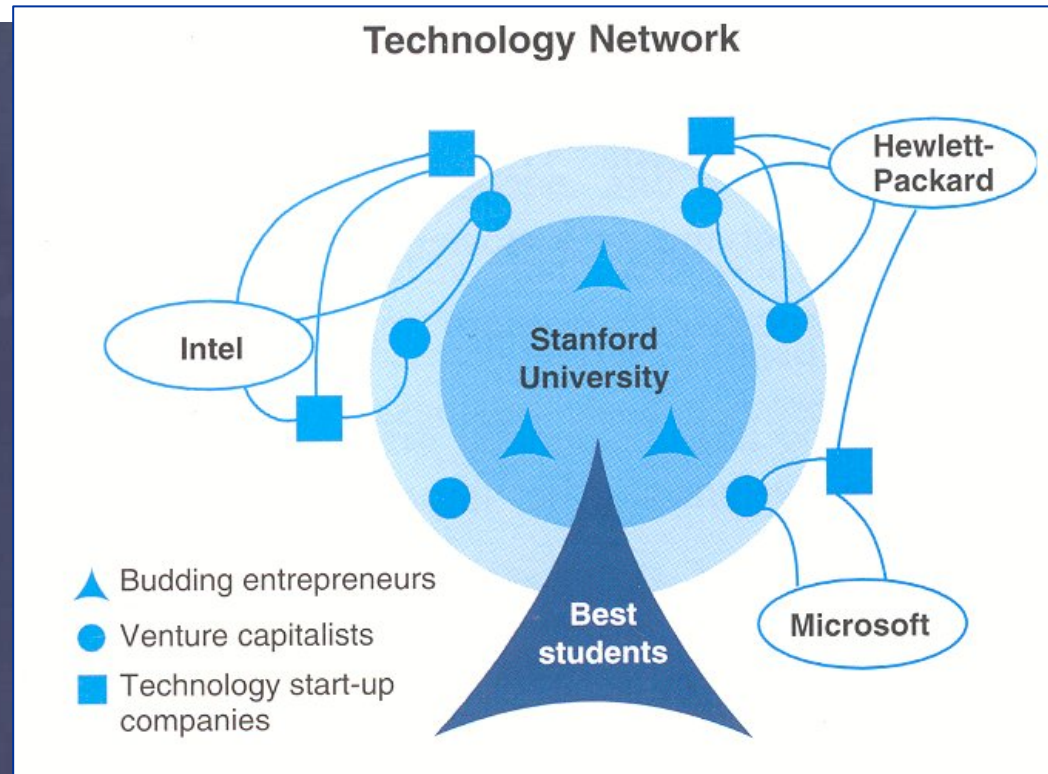
1997

Innovation as more than R&D...



1998

Technology networks as sources of advantage...

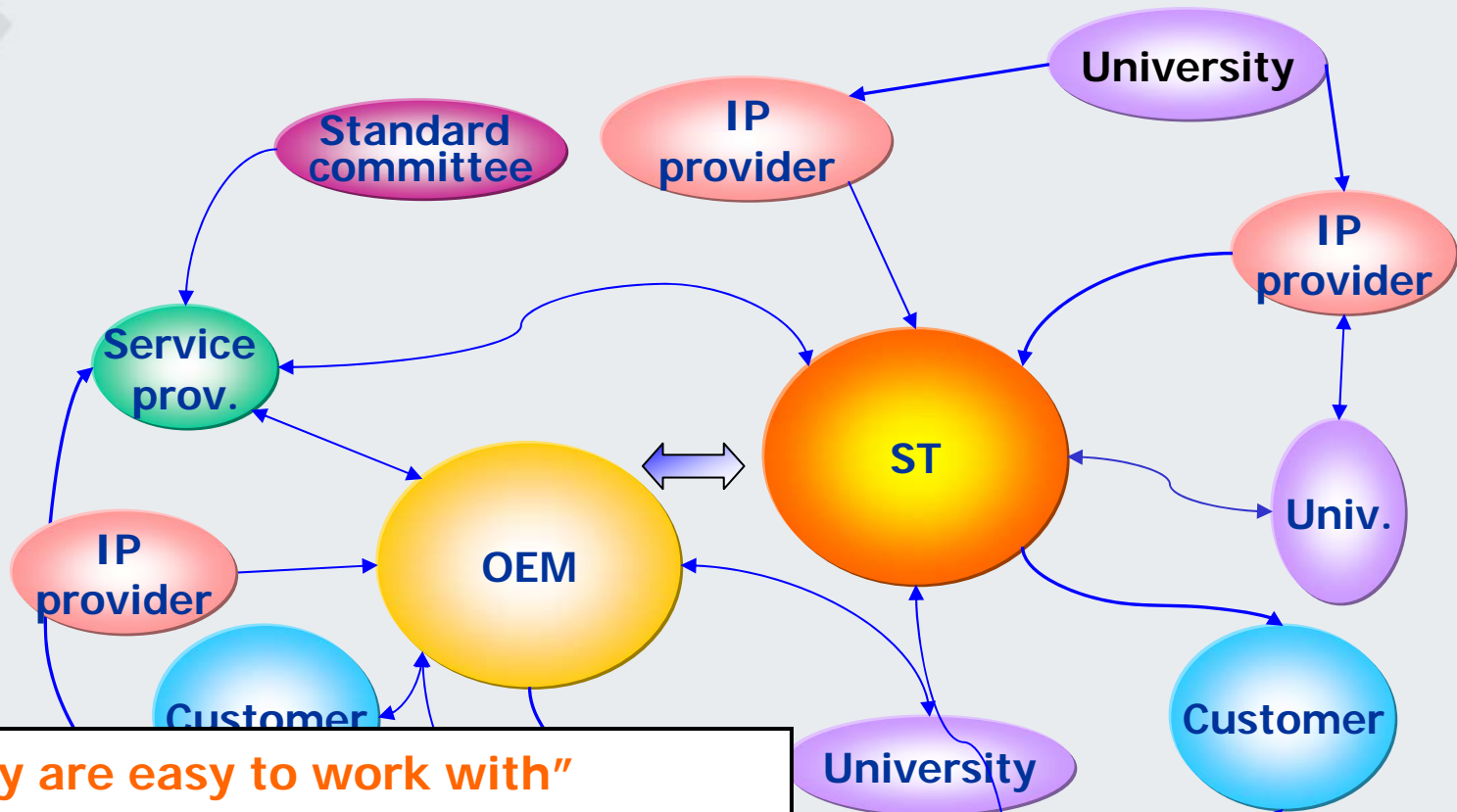


“Increasingly the best organisations will be those that learn to make the technology network operate to their advantage”

Group Scenarios 1998-2020

2002

Benefiting from networks...



"...they are easy to work with"

Cesar Cesaratto, President, Nortel Enterprise Networks Europe, giving reasons why Nortel chose ST as a strategic partner.

2005 Moving from closed "NatLab" to open "High Tech Campus" ...



2006 Proudly "Connect and Develop" ...



NEW!
Pringles PRINTS™

Look for new Pringles Prints with Daytona 500 trivia printed directly on the crisps in stores now! They have the same irresistible Pringles taste, but with printed fun on every one. Pringles Prints are available in classic Original flavor in both the can and Snack Stacks® sizes.

Enter to win a Daytona 500 Race Weekend with Darrell Waltrip! You and a guest could be part of the Great American Race—the 2006 Daytona 500.

▶▶ **enter now!**

What year did Darrell Waltrip win the DAYTONA 500?
1981

How do you win a DAYTONA 500 Race Weekend with Darrell Waltrip?
You can't!



Could Your Idea Be Printed on Pringles?

Get in on the Pringles Prints fun! Help us brainstorm new topics—from brainteasers to sports trivia and everything in between. Who knows? Your idea just might end up printed on Pringles!

Submit Your Idea

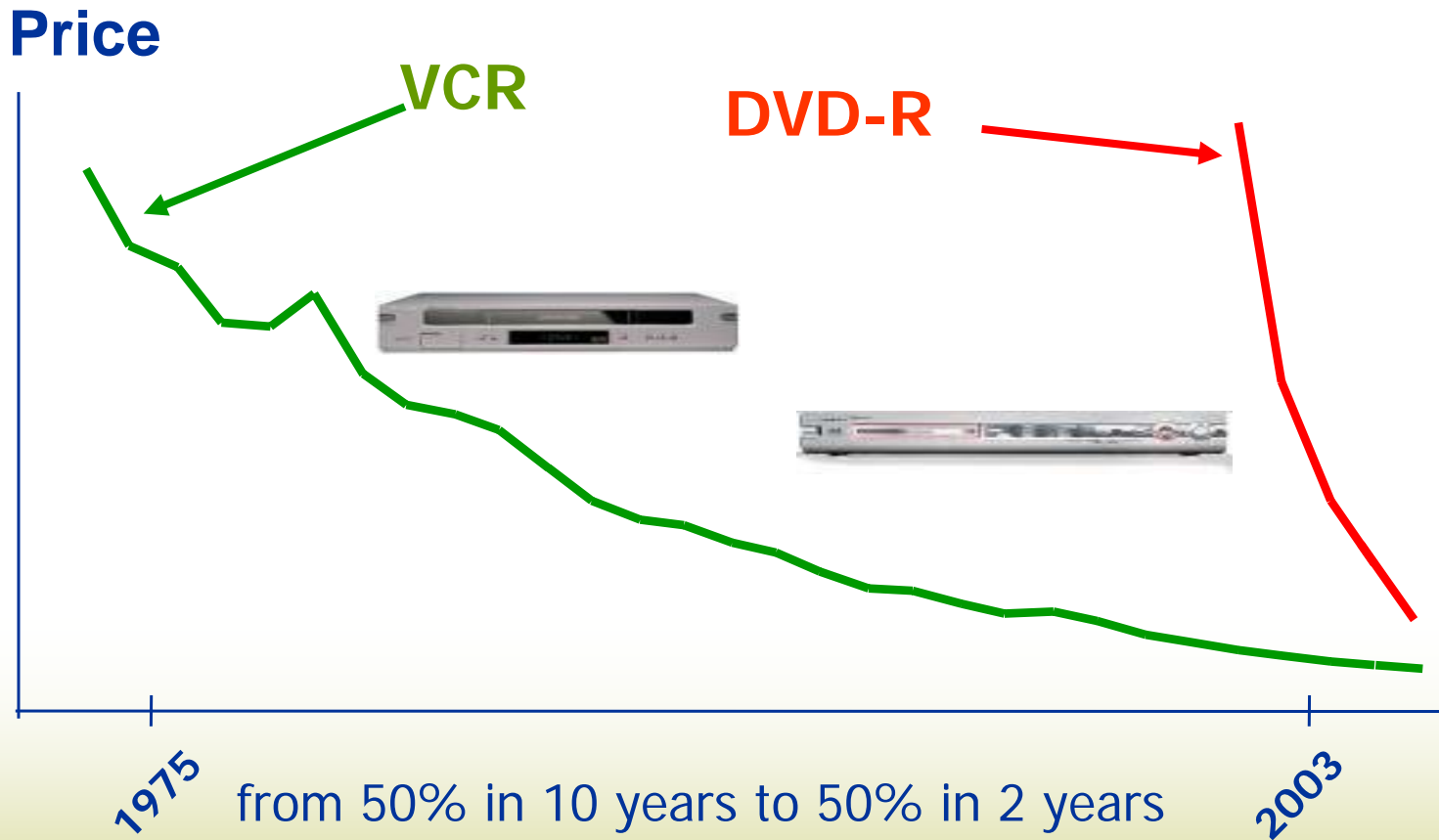
Coming Soon...

Can you outsmart "Survivor" trivia on Pringles Prints? Look for "Survivor" trivia printed on Pringles Prints in stores March 2005.



2006

Globalized Product Lifecycles...



2007

Functionality and Style...

- WCDMA2100 (HSDPA), EGSM900, GSM850/1800/1900 MHz (EGPRS)
- Up to 160 MB* internal dynamic memory
- Memory card slot supporting up to 2 GB microSD m
- Conference call
- Push to talk (PoC)
- Speaker independent name dialling (SIND)
- Voice commands
- Voice recorder
- Talking ringtone
- Integrated hands-free speaker
- Concatenated SMS, picture messaging, SMS distrib
- MMS, automatic resizing of your megapixel image
- (max 300 KB size depending on the network)
- Predictive text input: support for all major language and Asia-Pacific
- Integrated wireless LAN (802.11 b/g)
- UPnP (Universal Plug and Play)
- Integrated Bluetooth wireless technology v.2.0 ED
- USB 2.0 via Mini USB interface and mass storage support drag and drop functionality
- 3.5 mm stereo headphone plug and TV out support
- Nokia PC Suite connectivity with USB, Infrared and wireless technology
- Local synchronization of contacts and calendar to using compatible connection, Remote over-the-air synchronization
- Java MIDP 2.0, CLDC 1.1 (Connected Limited Device Configuration) (J2ME)
- Personal Information Management (PIM), Advanced S60 PIM features including calendar, contacts, to-do list, and PIM printing



- Settings Wizard for easy configuration of e-mail, push to talk
- Video sharing.
- 5 megapixel (2592 x 1944 pixels) camera, Carl Zeiss optics, Tessar lens, MPEG-4 VGA video capture of up to 30 fps
- connection to compatible TV via Nokia Video Connectivity Cable
- U, included in box) or wireless LAN/UPnP
- call and video sharing support (WCDMA network services)
- LED flash
- Stereo microphone
- Album/blog: photo/video uploading from gallery
- Weblog 2.0 support
- and still image editors
- Director for automated video production
- Print solution, Transfer photos directly to compatible printer or kiosk
- PressShare solution, Easy sharing of captured photos and directly from the gallery or straight after capture
- PressTransfer solution, Transfer and organise photos and between your device and compatible PC
- Music player - supports MP3/AAC/AAC+/eAAC+/WMA/M4A playlists and equalizer.
- AAC 2.0 & WMDRM support for music
- FM radio (87.5-108MHz /76-90MHz) with Visual Radio support
- GPS
- Nokia Web Browser with Mini map
- Supported video formats : MPEG-4 , H.264/AVC , H.263/3GPP, RealVideo 8/9/10

Company R&D - Then and Now

"Safeguard the corporation's future"

Basic -> applied research -> development

Technology as driver

Physical products

Proprietary "stuff"

Protective IP management

Corporate -> Business Units

Western brains

Western standards

Start in the West

"Unambiguously business driven"

Innovation seen as much more than R&D

Customer-led

Service content

Business process innovation

Active IP portfolio

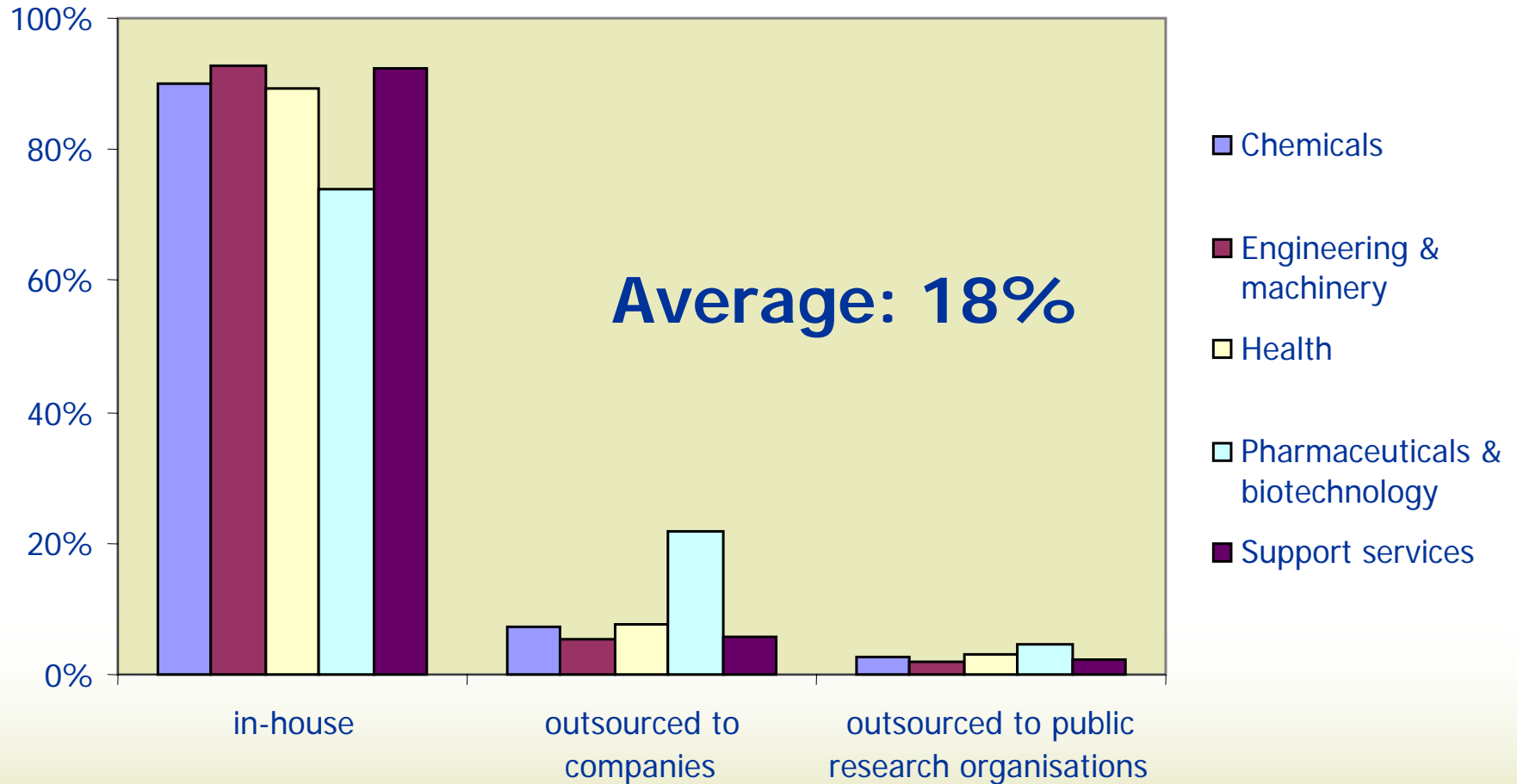
Partnerships essential

Global

Global

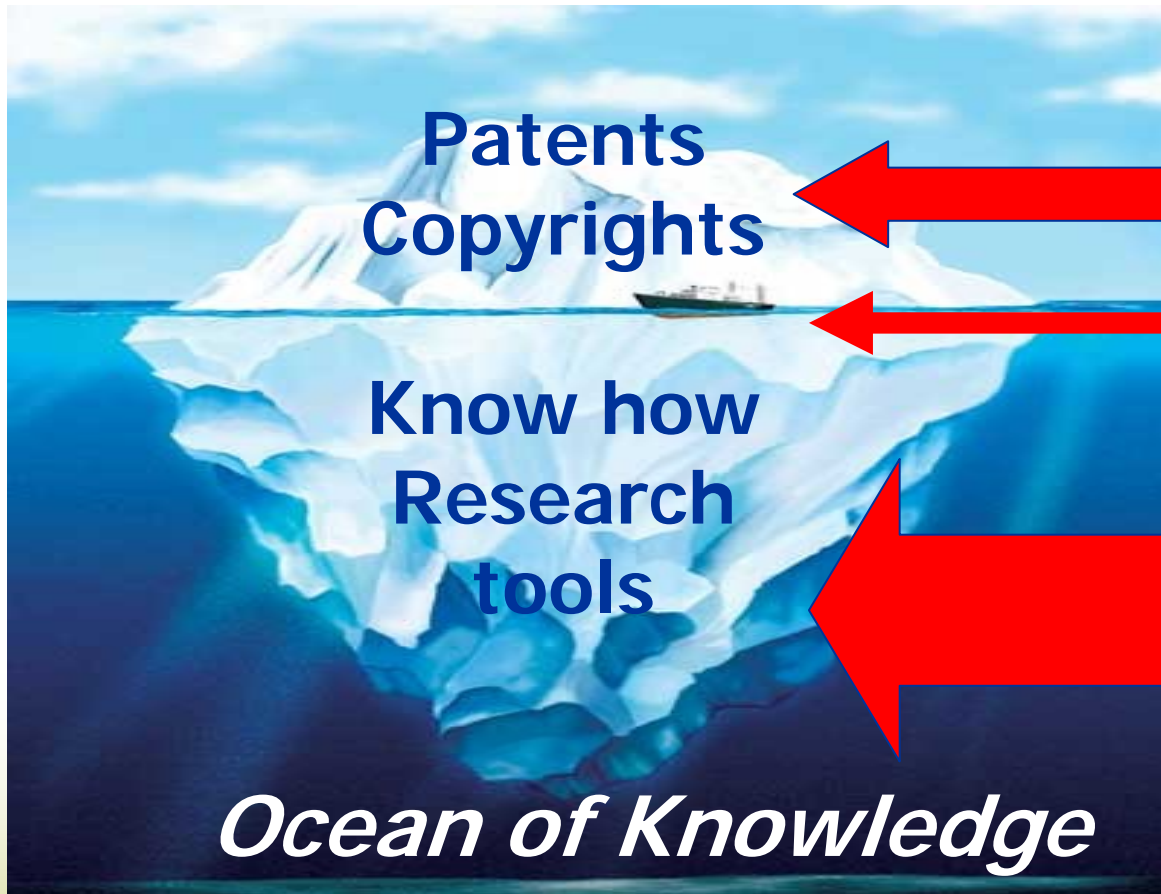
Global

Patterns of R&D Outsourcing...



European Commission (2005/06; 202 companies, weighted averages)

Making More Use of Public Knowledge



*Intellectual
Property available
for licensing*

Spinouts

*Collaborative
Research
Opportunities*

Ocean of Knowledge

University/Industry Collaboration Frequently Identified Problems

- Failure to recognise that - most often - knowledge is exchanged/transferred rather than specific technologies
- Lack of professionalism (on both sides)
- Difficulties brought about by
 - Unrealistic expectations
 - Diverging interests and culture
 - Volatile relationships
 - Poor project management
 - Disputes over ownership of results, exclusivity, compensation of indirect PRO costs, “fair” share of returns in case of success

Responsible Partnering



- Voluntary code reflecting proven good practices for Industry-Science collaboration
- Designed by practitioners
- Endorsed by key stakeholders
- Supported by Commissioners Potočník and Verheugen and endorsed in Aho
- Consistent with European Commission's 2008 Recommendations

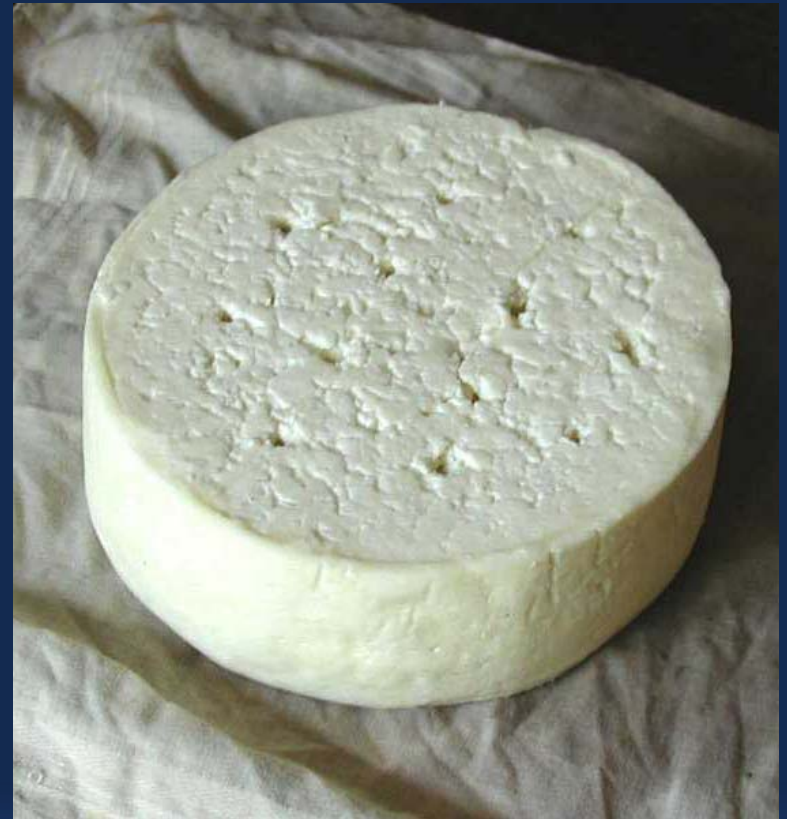
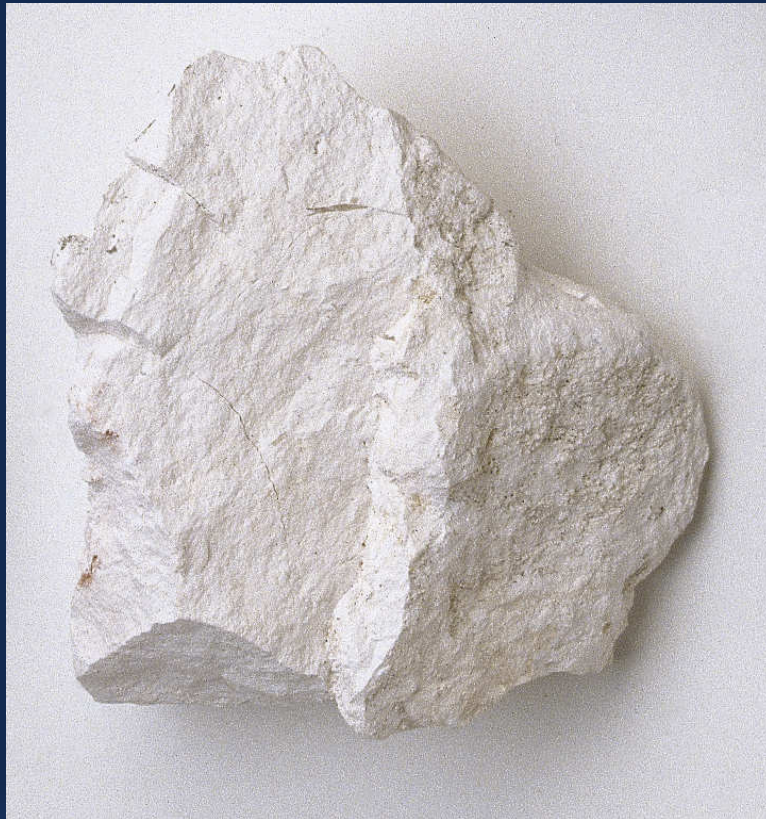
Responsible Partnering is about Organisation and Strategy

- Establish purpose: Make conscious decisions about the institute's strategic mission and differentiation
- Think long-term: Aim for durable frameworks that support these missions and encourage useful knowledge sharing
- Organise for success: Know what you want to achieve. Ensure sufficient professional support and use standardised processes where possible.
- Tell stories: Meet, discuss, understand good practices
- Encourage learning: Provide safe environments
- Frameworks: Aim for consistent, supportive codes and guidelines (national, EU, institutional)

Successful Approaches

- “No one size fits all” – many ways to achieve “win-win”
- Evident trust that collaboration will be successful
- Co-innovation as model
- Local initiative, professionalism, specialisation, flexibility
- Strategic intent plus effective, practical operational management
- Understand partners’ expectations/perceptions of delivery
- Recognise that own performance may need to improve
- “Properly supported” rather than “intermediated”

Chalk and Cheese



Elements - University

- > Supportive Vice-Chancellor
 - > & Senior Researchers
- > Research Activity
 - > High volume & quality
- > University IP Policy
 - > Ownership
 - > Revenue sharing
 - > Disputes
- > Research Services Office
 - > Research funders
- > Access to Proof of Concept / Seed funds
- > Technology Transfer Office

Elements - Business

- > Business Angels
- > Seed & Venture Capital
- > Entrepreneurs
- > Professional Advisers
 - > Banks
 - > Accountants
 - > Lawyers
 - > Property
- > Innovative Technology companies
 - > As Licensees
- > Business Networks

Intellectual Property Policy (October 2000)

- > University claims ownership of all employees' and students' IP rights resulting from University research activities
- > The university assists those researchers *who wish to* commercialise their research
 - > by patenting, licences, spinout companies & consultancy
- > Researchers share the benefits
 - > Royalty shares from licences
 - > Equity in spinout companies
 - > Income from personal consultancy

Research and Innovation Friendly Ecosystems

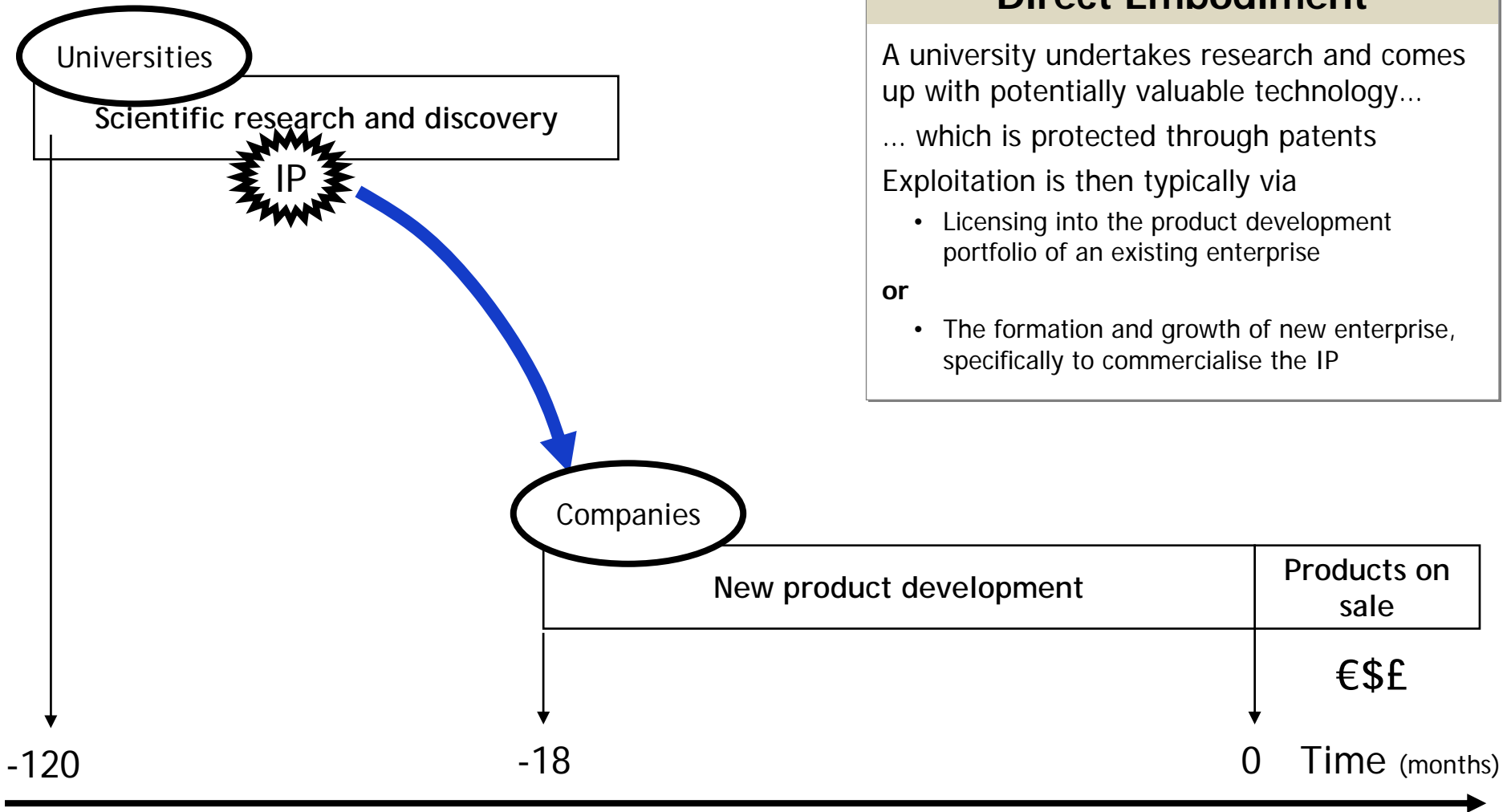
Ecology rather than research & innovation system as organising principle to describe rationale for ERA

Interactions and environmental features

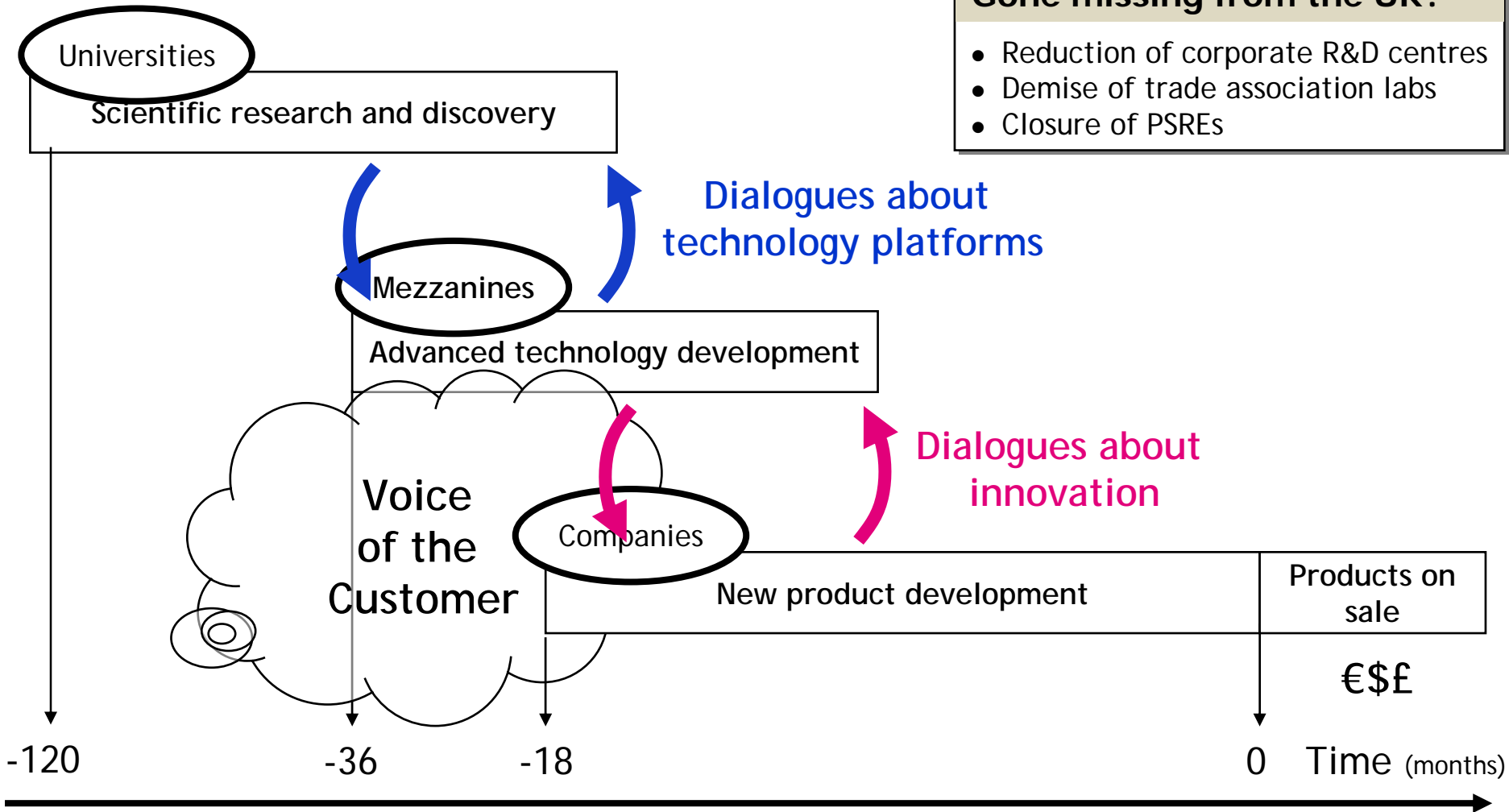
Marshalling competences: education and research as knowledge infrastructure

Distribution and abundance of research performers, their interactions with one another and the broader environment, mobility

Low transaction costs, responsive; resilience; related variety



Advanced Technology Development



- Gone missing from the UK?**
- Reduction of corporate R&D centres
 - Demise of trade association labs
 - Closure of PSREs

IMEC - Steady Investment – World Class

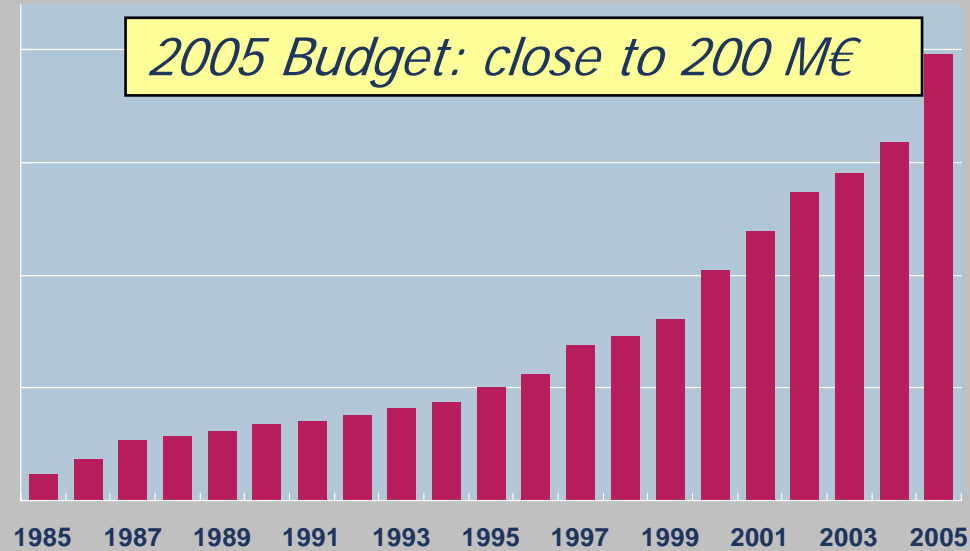
1984

Established by state government of Flanders in Belgium
 Non-profit organization
 Initial investment: 62M€
 Initial staff: ~70

200
150
100
50
0

2005 Budget: close to 200 M€

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005

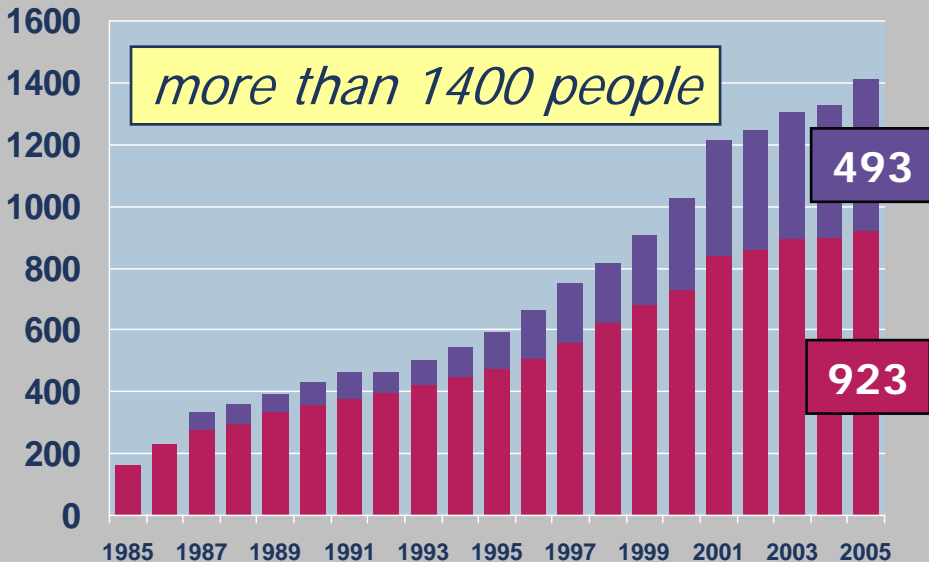


more than 1400 people

493

923

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005



2006

One of the largest independent R&D organizations in this field, worldwide
 Annual budget : close to 200M€ (includes 35 M€ grant from government)
 Staff: more than 1400
 Collaboration with >500 partners
 < 18% government/state funding

Supply chains, empowered universities and engaged businesses...

Support initiatives should follow supply chains

Research Ecologies require reinforced pathways between small and large firms and between firms and public research

-> Do not target SMEs separately from their main customers

Universities play a crucial role but diversity has to be recognised

-> Pressing need to replace bureaucratic restrictions with autonomy and accountability

Firms play central role in wider research and innovation ecology

-> Enable them to do their job well; provide innovation-friendly markets; engage in vertical actions for market creation

-> Understand positive/negative impact of regulations (e.g. on State Aid)

Establishing Better Markets for Applied Research...

- Research and Technology Organisations can fill in the “missing mezzanine” in the ecology but currently have minimal cross-border business
 - Non-national EU enterprise income less than 5% of turnover of €5.8 billion for top 9 RTOs
 - Non-national governmental business is negligible
- Measures needed to stimulate mergers, joint ventures and other linkages
- Consideration should also be given to specific subsidies for cross-border business

Establishing closer links between European Research and broader European Policy...

- Benefits of an effective European Research Area can be gained across full range of policies and regulatory responsibilities agreed at European level
- Requires closer alignment between Framework Programme/coordinated national research and support for other European policies
- Argument may not apply to European Research Council and other research where principal goal is promotion of excellence and capacity – but it does apply to most of the research currently conducted at European level

Purpose, meaning and relevance expressed...

- How to make **compelling case for real shift in resources**
 - More meaningful to citizens and political leaders
 - More relevant to all research actors
 - Better articulation of balance of demand and supply
- **Institution in its setting**, reinforced by related variety
 - Promoting networked specialisation and localised concentration
 - Linking complementary capabilities
 - Competing for larger and longer term units of funding
 - Placing more responsibility on competent regional authorities
 - Improving professionalism